Hazardous Waste Storage Permit Renewal Application Volume 1

Miles Avenue Site
March, 1996

Bayer

Bayer Corporation
1884 Miles Avenue
Elkhart, IN 46514

SENT VIA AIRBORNE EXPRESS

RECEIVED 4/3/96

Bayer

R. Lennie Scott, P.E., DEE
Director
Health, Environment & Safety
Elkhart Area Site

April 2, 1996

Mr. Victor P. Windle, Chief
Hazardous Waste Permit Section
Office of Solid and
Hazardous Waste Management
Indiana Department of
Environmental Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, IN 46206-6015

Dear Mr. Windle:

Enclosed please find four (4) copies of the Bayer Corporation, Miles Avenue Site Part B Renewal Application for the storage of hazardous wastes at our facility at 1884 Miles Avenue, Elkhart, Indiana (EPA ID No. IND005068705). Also enclosed is one (1) 3.5 inch computer disk containing the text portions of this submittal in WordPerfect version 5.1.

A check in the amount of $17,200.00 to cover the cost of this permit renewal was sent to the Cashier's office under separate cover. A copy of the fee transmittal form and check are enclosed.

If you have any questions or require additional information, please contact Tom Lenz at 219/262-6502.

Sincerely,

R. Lennie Scott, P.E., DEE

Enclosures

cc: Mr. Hak K. Cho, U. S. EPA, Region V

Bayer Corporation (P03.21.1)
1884 Miles Avenue
P.O. Box 40
Elkhart, IN 46515-0040
Phone: 219 262-7234
Fax: 219 264-8666

Distribution:

Number of Copies	To:
4	Victor P. Windle, Chief Hazardous Waste Permit Section Office of Solid and Hazardous Waste Management Indiana Department of Environmental Management 100 North Senate Avenue P.O. Box 6015 Indianapolis, IN 46206-6015
2	Hak K. Cho, Chief, Indiana Section RCRA Activities Part B Permit Application U.S. EPA Region V 206 S. Dearborn Street P.O. Box A3587 Chicago, IL 60690-3587
1	Mr. Joel Robinson Bayer Corporation Corporate Environmental Control Bayer Road Pittsburgh, PA 15205
3	Bayer Corporation Miles Avenue Site Environmental Department 1884 Miles Avenue Elkhart, IN 46514

State Form 47214 (7-95)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
HAZARDOUS WASTE FACILITY PERMIT APPLICATION

FEE TRANSMITTAL

Instruction:

This form shall be used to transmit fees for all hazardous waste facility permits, applications, and modifications (**NEW** permits, **RENEWALS** of permits, Class 2 & 3 **MODIFICATIONS** of permits) pursuant to legislation IC 13-7-16-6, and is to accompany all payments. Make check or money order payable to the Indiana Department of Environmental Management. Upon completion, return this form and appropriate fees to the following address:

Cashier's Office (N1324)
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 7060
Indianapolis, IN 46206-7060

A **COPY** of your check and a **COPY** of this fee transmittal form must be attached to your permit application. Submit application and modification materials to:

Mr. Victor P. Windle
11th Floor (N1154)
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

SECTION A. APPLICANT(S) INFORMATION

NAME:

BAYER CORPORATION

MAILING ADDRESS: Street City

1884 MILES AVENUE, P03.21.1, ELKHART

State Zip Code

INDIANA 46514

AC-TELEPHONE NUMBER:

219/262-7234

FACILITY NAME and COUNTY:

BAYER CORPORATION, MILES AVENUE TSD, ELKHART

ACC. #2830-412300-100800

SECTION B. HAZARDOUS WASTE PERMIT FEE SCHEDULE

The following fees are to accompany applications and modifications. Please circle the fee(s) which you are paying.

Type of Facility	New Site Application	Permit Renewal	Class 3 Modification	Class 2 Modification
Hazardous Waste Landfill	$40,600	$34,000	$34,000	$2,250
Hazardous Waste Incinerator	$21,700	$21,700	$21,700	$2,250
Hazardous Waste Treatment/ Storage Facility	$23,800	$17,200	$17,200	$2,250
Part B for Existing Treatment/ Storage Facility*	$23,800	N/A	N/A	N/A

*Applies to interim status facility seeking first permit

THE BACK OF THIS DOCUMENT CONTAINS A BAYER CORPORATION AND CHECK PROTECT FACSIMILE WATERMARK - VOID IF NOT PRESENT - CAN BE SEEN AT AN ANGLE

Citibank Delaware
One Penn's Way
New Castle, DE 19720

Bayer

CHECK NO. 6580785

62-20
311

Bayer Corporation
Elkhart, IN 46515-0040

PAY:
SEVENTEEN THOUSAND TWO HUNDRED AND ***
NO/100 DOLLARS **********

VOID 180 DAYS AFTER DATE OF CHECK

DATE: 03-11-96 $*****17,200.00

NOT GOOD OVER $50,000

TO THE ORDER OF

INDIANA DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
PO BOX 7060 ATTN CASHIER
INDIANAPOLIS IN 46206-7060

Authorized Signatures

Jay C Ritchie
James G Nelson

⑈6580785⑈ ⑆031100209⑆ 3910278 4⑈

H.578 (7/95)

Bayer

Bayer Corporation
Elkhart, IN 46515-0040

VENDOR NO.	VENDOR NAME	DATE	CHECK NO.	CHECK AMOUNT
-S- 97765A9	INDIANA DEPARTMENT OF	03-11-96	6580785	17,200.00

INVOICE NO.	DATE	VOUCHER	GROSS AMOUNT	DISCOUNT	NET AMOUNT
		HAZARDOUS WASTE PERMIT RENEWL			
030696	03-06-96	AC1934	17,200.00		17,200.00

ISSUED 10/28/96

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APPENDICES

Facility Name BAYER CORPORATION
ID No. IND 005 068 705
Date Part B Received
Date Review Due

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

			Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
A.	PART A APPLICATION						Appendix A
B.	FACILITY DESCRIPTION						
	B-1	General description					Section 2.1
	B-2	Topographic map					Appendix B, Figure B-2
	B-2a	General requirements					Section 2
	B-2b	Additional requirements for land disposal facilities					N/A
	B-3	Location information					Section 2
	B-3a	Seismic standard					Section 2.3a
	B-3b	Floodplain standard					Section 2.3b and Figure B-7
	B-3b(1)	Demonstration of compliance					N/A
	B-3b(1)(a)	Flood proofing and flood protection measures					N/A
	B-3b(1)(b)	Flood plan					N/A
	B-3b(2)	Plan for future compliance with floodplain standard					N/A
	B-3b(3)	Waiver for Land Storage and Disposal Facilities					N/A
	B-4	Traffic information					Section 2.4a
C.	WASTE CHARACTERISTICS						
	C-1	Chemical and physical analyses					Section 3.1a
	C-1a	Containerized waste					Section 3.1b
	C-1b	Waste in tank systems					N/A
	C-1c	Waste in piles					N/A
	C-1d	Landfilled wastes					N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
C-1e	Wastes incinerated and wastes used in performance tests	___	___	___	___	N/A
C-1f	Wastes to be land treated	___	___	___	___	N/A
C-1g	Wastes in miscellaneous treatment units	___	___	___	___	N/A
C-1h	Wastes in boilers and industrial furnaces	___	___	___	___	N/A
C-2	Waste analysis plan	___	___	___	___	Section 3.2
C-2a	Parameters and rationale	___	___	___	___	Section 2.3b and 3.2c
C-2b	Test methods	___	___	___	___	Section 3.2d
C-2c	Sampling methods	___	___	___	___	Section 3.2e
C-2d	Frequency of analyses	___	___	___	___	Section 3.2b and 3.2f
C-2e	Additional requirements for wastes generated off-site	___	___	___	___	Section 3.2b and 3.2g
C-2f	Additional requirements for ignitable, reactive or incompatible wastes	___	___	___	___	Section 3.2h
C-2g	Additional requirements pertaining to boilers and industrial furnace facilities	___	___	___	___	N/A
C-2h	Additional requirements pertaining to containment buildings	___	___	___	___	N/A
C-3	Waste analysis requirements pertaining to land disposal restrictions	___	___	___	___	Section 3.2
C-3a	Waste analysis	___	___	___	___	Section 3.2
C-3a(1)	Spent solvent and dioxin wastes	___	___	___	___	Section 3.2
C-3a(2)	California list wastes	___	___	___	___	Section 3.2
C-3a(3)	Listed wastes	___	___	___	___	Section 3.2
C-3a(4)	Characteristic wastes	___	___	___	___	Section 3.2

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
C-3a(5)	Radioactive mixed waste	___	___	___	___	N/A
C-3a(6)	Leachates	___	___	___	___	N/A
C-3a(7)	Lab packs	___	___	___	___	N/A
C-3a(8)	Contaminated debris	___	___	___	___	N/A
C-3a(9)	Waste mixtures and wastes with overlapping requirements	___	___	___	___	Section 3.2
C-3a(10)	Dilution and aggregation of wastes	___	___	___	___	N/A
C-3b	Notification, certification and recordkeeping requirements	___	___	___	___	Section 3.3
C-3b(1)	Retention of generator notices and certifications	___	___	___	___	Section 3.3a
C-3b(2)	Notification and certification requirements for treatment facilities	___	___	___	___	N/A
C-3b(3)	Notification and certification requirements for land disposal facilities	___	___	___	___	N/A
C-3b(4)	Wastes shipped to Subtitle C facilities	___	___	___	___	Section 3.3
C-3b(5)	Wastes shipped to Subtitle D facilities	___	___	___	___	N/A
C-3b(6)	Recyclable materials	___	___	___	___	N/A
C-3b(7)	Recordkeeping	___	___	___	___	Section 3.3
C-3c	Requirements pertaining to the storage of restricted wastes	___	___	___	___	Section 3.3b
C-3c(1)	Restricted wastes stored in containers	___	___	___	___	Section 3.3b
C-3c(2)	Restricted wastes stored in tanks	___	___	___	___	N/A
C-3c(3)	Storage of liquid PCB wastes	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
C-3d	Exemptions, extensions, and variances to land disposal restrictions					N/A
C-3d(1)	Case-by-case extensions to an effective date					N/A
C-3d(2)	Exemption from prohibition					N/A
C-3d(3)	Variance from a treatment standard					N/A
C-3d(4)	Requirements for surface impoundments exempted from land disposal restrictions					N/A
C-3d(4)(a)	Exemption for newly identified or listed wastes					N/A
C-3d(4)(b)	Treatment of wastes					N/A
C-3d(4)(c)	Sampling and testing					N/A
C-3d(4)(d)	Annual removal of residues					N/A
C-3d(4)(e)	Design requirements					N/A
D. PROCESS INFORMATION						
D-1	Containers					Section 4.1
D-1a	Containers with free liquids					Section 4.1a
D-1a(1)	Description of containers					Section 4.1a(1)
D-1a(2)	Container management practices					Section 4.1a(2)
D-1a(3)	Secondary containment system design and operation					Section 4.1a(3)
D-1a(3)(a)	Requirement for the base or liner to contain liquids					Section 4.1a(3)
D-1a(3)(b)	Containment system drainage					Section 4.1a(3)
D-1a(3)(c)	Containment system capacity					Section 4.1a(3)c
D-1a(3)(d)	Control of run-on					Section 4.1a(4)

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-1a(3)(e)	Removal of liquids from containment system	___	___	___	___	Section 4.1a(5)
D-1b	Containers without free liquids	___	___	___	___	Section 4.1b
D-1b(1)	Test for free liquids	___	___	___	___	Section 4.1b
D-1b(2)	Description of containers	___	___	___	___	Section 4.1b
D-1b(3)	Container management practices	___	___	___	___	Section 4.1b
D-1b(4)	Container storage area drainage	___	___	___	___	Section 4.1b
D-2	Tank systems	___	___	___	___	N/A
D-2a	Tank systems description	___	___	___	___	N/A
D-2a(1)	Dimensions and capacity of each tank	___	___	___	___	N/A
D-2a(2)	Description of feed systems, safety cutoff, bypass systems, and pressure controls	___	___	___	___	N/A
D-2a(3)	Diagram of piping, instrumentation and process-flow	___	___	___	___	N/A
D-2a(4)	Ignitable, reactive and incompatible wastes	___	___	___	___	N/A
D-2b	Existing tank system	___	___	___	___	N/A
D-2b(1)	Assessment of existing tank system's integrity	___	___	___	___	N/A
D-2c	New tank systems	___	___	___	___	N/A
D-2c(1)	Assessment of new tank system's integrity	___	___	___	___	N/A
D-2c(2)	Description of tank system installation and testing plans and procedures	___	___	___	___	N/A
D-2d	Containment and detection of releases	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-2d(1)	Plans and description of the design, construction, and operation of the secondary containment system	____	____	____	____	N/A
D-2d(1)(a)	Tank age determination	____	____	____	____	N/A
D-2d(1)(b)	Requirements for secondary containment and leak detection	____	____	____	____	N/A
D-2d(1)(c)	Requirements for an external liner, vault, double-walled tank or equivalent device	____	____	____	____	N/A
D-2d(1)(d)	Secondary containment and leak detection requirements for ancillary equipment	____	____	____	____	N/A
D-2d(1)(e)	Containment buildings used as secondary containment for tank systems	____	____	____	____	N/A
D-2d(2)	Requirements for tank systems until secondary containment is implemented	____	____	____	____	N/A
D-2d(3)	Variance from secondary containment requirements	____	____	____	____	N/A
D-2d(3)(a)	Variance based on a demonstration of equivalent protection of groundwater and surface water	____	____	____	____	N/A
D-2d(3)(b)	Variance based on a demonstration of no substantial present or potential hazard	____	____	____	____	N/A
D-2d(3)(c)	Exemption based on no free liquids and location inside a building	____	____	____	____	N/A
D-2e	Controls and practices to prevent spills and overflows	____	____	____	____	N/A
D-3	Waste piles	____	____	____	____	N/A
D-3a	List of wastes	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-3b	Liner exemption	___	___	___	___	N/A
D-3b(1)	Enclosed dry piles	___	___	___	___	N/A
D-3b(1)(a)	Protection from precipitation	___	___	___	___	N/A
D-3b(1)(b)	Free liquids	___	___	___	___	N/A
D-3b(1)(c)	Run-on protection	___	___	___	___	N/A
D-3b(1)(d)	Wind dispersal control	___	___	___	___	N/A
D-3b(1)(e)	Leachate generation	___	___	___	___	N/A
D-3b(2)	Exemption for monofills	___	___	___	___	N/A
D-3b(3)	Alternate design/ no migration	___	___	___	___	N/A
D-3b(4)	Exemption based on alternative design and location	___	___	___	___	N/A
D-3b(5)	Exemption for replacement waste piles	___	___	___	___	N/A
D-3c	Liner system	___	___	___	___	N/A
D-3c(1)	Liner description	___	___	___	___	N/A
D-3c(1)(a)	Synthetic liners	___	___	___	___	N/A
D-3c(1)(b)	Soil liner	___	___	___	___	N/A
D-3c(2)	Liner location relative to high water table	___	___	___	___	N/A
D-3c(3)	Calculation of required soil liner thickness	___	___	___	___	N/A
D-3c(4)	Liner strength requirements	___	___	___	___	N/A
D-3c(5)	Liner strength demonstration	___	___	___	___	N/A
D-3c(6)	Liner/waste compatibility testing results	___	___	___	___	N/A
D-3c(7)	Liner installation	___	___	___	___	N/A
D-3c(7)(a)	Synthetic liner seaming	___	___	___	___	N/A
D-3c(7)(b)	Soil liner compaction	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-3c(7)(c)	Installation inspection/ testing programs	___	___	___	___	N/A
D-3c(8)	Liner coverage	___	___	___	___	N/A
D-3c(9)	Liner exposure prevention	___	___	___	___	N/A
D-3c(10)	Synthetic-liner bedding	___	___	___	___	N/A
D-3d	Liner foundation report	___	___	___	___	N/A
D-3d(1)	Liner foundation design description	___	___	___	___	N/A
D-3d(2)	Subsurface exploration data	___	___	___	___	N/A
D-3d(3)	Laboratory testing data	___	___	___	___	N/A
D-3d(4)	Engineering analyses	___	___	___	___	N/A
D-3d(4)(a)	Settlement potential	___	___	___	___	N/A
D-3d(4)(b)	Bearing capacity and stability	___	___	___	___	N/A
D-3d(4)(c)	Potential for bottom heave or blow-out	___	___	___	___	N/A
D-3d(4)(d)	Construction and operational loadings	___	___	___	___	N/A
D-3d(5)	Foundation installation procedures	___	___	___	___	N/A
D-3d(6)	Foundation installation inspection program	___	___	___	___	N/A
D-3e	Leachate collection and removal system	___	___	___	___	N/A
D-3e(1)	Upper leachate collection and removal system	___	___	___	___	N/A
D-3e(2)	Leachate detection system	___	___	___	___	N/A
D-3e(2)(a)	Grading and drainage	___	___	___	___	N/A
D-3e(3)	Chemical resistance	___	___	___	___	N/A
D-3e(4)	Strength of materials	___	___	___	___	N/A
D-3e(5)	Prevention of clogging	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-3e(6)	Installation	____	____	____	____	N/A
D-3e(7)	Maintenance	____	____	____	____	N/A
D-3e(8)	Liquid removal	____	____	____	____	N/A
D-3e(9)	Location relative to water table	____	____	____	____	N/A
D-3f	Action leakage rate	____	____	____	____	N/A
D-3f(1)	Determination of action leakage rate	____	____	____	____	N/A
D-3f(2)	Monitoring of leakage	____	____	____	____	N/A
D-3g	Leakage response action plan	____	____	____	____	N/A
D-3g(1)	Response action	____	____	____	____	N/A
D-3g(2)	Leak and/or remedial determinations	____	____	____	____	N/A
D-3g(3)	Notifications	____	____	____	____	N/A
D-3h	Run-on control system	____	____	____	____	N/A
D-3h(1)	Calculation of peak flow	____	____	____	____	N/A
D-3h(2)	Design and performance	____	____	____	____	N/A
D-3h(3)	Construction	____	____	____	____	N/A
D-3h(4)	Maintenance	____	____	____	____	N/A
D-3i	Run-off control system	____	____	____	____	N/A
D-3i(1)	Calculation of peak flow	____	____	____	____	N/A
D-3i(2)	Design and performance	____	____	____	____	N/A
D-3i(3)	Construction	____	____	____	____	N/A
D-3i(4)	Maintenance	____	____	____	____	N/A
D-3j	Management of collection and holding units	____	____	____	____	N/A
D-3k	Control of wind dispersal	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-3l	Groundwater monitoring exemption	___	___	___	___	N/A
D-3l(1)	Engineered structure	___	___	___	___	N/A
D-3l(2)	No liquid waste	___	___	___	___	N/A
D-3l(3)	Exclusion of liquids	___	___	___	___	N/A
D-3l(4)	Containment system	___	___	___	___	N/A
D-3l(5)	Leak detection system	___	___	___	___	N/A
D-3l(6)	Operation of leak detection system	___	___	___	___	N/A
D-3l(7)	No migration	___	___	___	___	N/A
D-3m	Treatment within the pile	___	___	___	___	N/A
D-3m(1)	Treatment process description	___	___	___	___	N/A
D-3m(2)	Equipment used	___	___	___	___	N/A
D-3m(3)	Residuals description	___	___	___	___	N/A
D-3n	Special waste management plan for piles containing F020, F021, F023, F026, and F027 wastes	___	___	___	___	N/A
D-3n(1)	Waste description	___	___	___	___	N/A
D-3n(2)	Soil description	___	___	___	___	N/A
D-3n(3)	Mobilizing properties	___	___	___	___	N/A
D-3n(4)	Additional management techniques	___	___	___	___	N/A
D-3o	Construction quality assurance program	___	___	___	___	N/A
D-4	Surface impoundments	___	___	___	___	N/A
D-4a	List of wastes	___	___	___	___	N/A
D-4b	Liner system exemption requests	___	___	___	___	N/A
D-4b(1)	Exemption based on existing portion	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-4b(2)	Exemption based on alternative design and location	____	____	____	____	N/A
D-4b(3)	Exemption for replacement surface impoundments	____	____	____	____	N/A
D-4c	Liner system, general items	____	____	____	____	N/A
D-4c(1)	Liner system description	____	____	____	____	N/A
D-4c(2)	Liner system location relative to high water table	____	____	____	____	N/A
D-4c(3)	Load on liner system	____	____	____	____	N/A
D-4c(4)	Liner system coverage	____	____	____	____	N/A
D-4c(5)	Liner system exposure prevention	____	____	____	____	N/A
D-4d	Liner system, foundation	____	____	____	____	N/A
D-4d(1)	Foundation description	____	____	____	____	N/A
D-4d(2)	Subsurface exploration data	____	____	____	____	N/A
D-4d(3)	Laboratory testing data	____	____	____	____	N/A
D-4d(4)	Engineering analyses	____	____	____	____	N/A
D-4d(4)(a)	Settlement potential	____	____	____	____	N/A
D-4d(4)(b)	Bearing capacity	____	____	____	____	N/A
D-4d(4)(c)	Potential for excess hydrostatic or gas pressure	____	____	____	____	N/A
D-4e	Liner systems, liners	____	____	____	____	N/A
D-4e(1)	Synthetic liners	____	____	____	____	N/A
D-4e(1)(a)	Synthetic liner compatibility data	____	____	____	____	N/A
D-4e(1)(b)	Synthetic liner strength	____	____	____	____	N/A
D-4e(1)(c)	Synthetic liner bedding	____	____	____	____	N/A
D-4e(2)	Soil liners	____	____	____	____	N/A
D-4e(2)(a)	Material testing data	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-4e(2)(b)	Soil liner compatibility data					N/A
D-4e(2)(c)	Soil liner strength					N/A
D-4f	Liner system, leachate detection system					N/A
D-4f(1)	System operation and design					N/A
D-4f(2)	Drainage material					N/A
D-4f(3)	Grading and drainage					N/A
D-4f(4)	System compatibility					N/A
D-4f(5)	System strength					N/A
D-4f(5)(a)	Stability of drainage layers					N/A
D-4f(5)(b)	Strength of piping					N/A
D-4f(6)	Prevention of clogging					N/A
D-4f(7)	Liquid removal					N/A
D-4f(8)	Location relative to water table					N/A
D-4g	Liner system, construction and maintenance					N/A
D-4g(1)	Material specifications					N/A
D-4g(1)(a)	Synthetic liners					N/A
D-4g(1)(b)	Soil liners					N/A
D-4g(1)(c)	Leachate detection system					N/A
D-4g(2)	Construction specifications					N/A
D-4g(2)(a)	Liner system foundation					N/A
D-4g(2)(b)	Soil liner					N/A
D-4g(2)(c)	Synthetic liners					N/A
D-4g(2)(d)	Leachate detection system					N/A
D-4g(3)	Construction quality assurance program					N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-4g(4)	Maintenance procedures for leachate detection system	____	____	____	____	N/A
D-4g(5)	Liner repairs during operations	____	____	____	____	N/A
D-4h	Action leakage rate	____	____	____	____	N/A
D-4h(1)	Determination of action leakage rate	____	____	____	____	N/A
D-4h(2)	Monitoring of leakage	____	____	____	____	N/A
D-4i	Leakage response action plan	____	____	____	____	N/A
D-4i(1)	Response action	____	____	____	____	N/A
D-4i(2)	Leak and/or remedial determinations	____	____	____	____	N/A
D-4i(3)	Notifications	____	____	____	____	N/A
D-4j	Prevention of overtopping	____	____	____	____	N/A
D-4j(1)	Design features	____	____	____	____	N/A
D-4j(2)	Operating procedure	____	____	____	____	N/A
D-4j(3)	Overtopping prevention	____	____	____	____	N/A
D-4j(4)	Freeboard requirements	____	____	____	____	N/A
D-4j(5)	Outflow destination	____	____	____	____	N/A
D-4k	Dike stability	____	____	____	____	N/A
D-4k(1)	Engineer's certification	____	____	____	____	N/A
D-4k(2)	Dike design description	____	____	____	____	N/A
D-4k(3)	Erosion and piping protection	____	____	____	____	N/A
D-4k(4)	Subsurface soil conditions	____	____	____	____	N/A
D-4k(5)	Stability analysis	____	____	____	____	N/A
D-4k(6)	Strength and compressibility test results	____	____	____	____	N/A
D-4k(7)	Dike construction procedures	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-4k(8)	Dike construction inspection program	____	____	____	____	N/A
D-4l	Special waste management plan for surface impoundments containing F020, F021, F022, F023 F026, and F027 waste	____	____	____	____	N/A
D-4l(1)	Waste description	____	____	____	____	N/A
D-4l(2)	Soil description	____	____	____	____	N/A
D-4l(3)	Mobilizing properties	____	____	____	____	N/A
D-4l(4)	Additional management techniques	____	____	____	____	N/A
D-5	Incinerators	____	____	____	____	N/A
D-5a	Justification for exemption	____	____	____	____	N/A
D-5b	Trial burn	____	____	____	____	N/A
D-5b(1)	Trial burn plan	____	____	____	____	N/A
D-5b(1)(a)	Detailed engineering description of incinerator	____	____	____	____	N/A
D-5b(1)(b)	Sampling and monitoring procedures	____	____	____	____	N/A
D-5b(1)(c)	Trial burn schedule	____	____	____	____	N/A
D-5b(1)(d)	Test protocols	____	____	____	____	N/A
D-5b(1)(e)	Pollution control equipment operation	____	____	____	____	N/A
D-5b(1)(f)	Shutdown procedures	____	____	____	____	N/A
D-5c	Data submitted in lieu of trial burn	____	____	____	____	N/A
D-5c(1)	Detailed engineering description of incineration	____	____	____	____	N/A
D-5c(2)	Expected incinerator operation	____	____	____	____	N/A
D-5c(3)	Design and operating conditions	____	____	____	____	N/A
D-5c(4)	Previous trial burn results	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-5c(4)(a)	Sampling and analysis techniques	___	___	___	___	N/A
D-5c(4)(b)	Methods and results	___	___	___	___	N/A
D-5d	Determinations	___	___	___	___	N/A
D-6	Landfills	___	___	___	___	N/A
D-6a	List of wastes	___	___	___	___	N/A
D-6b	Liner system exemption requests	___	___	___	___	N/A
D-6b(1)	Exemption based on existing portion	___	___	___	___	N/A
D-6b(2)	Exemption based on alternative design and location	___	___	___	___	N/A
D-6b(3)	Exemption for replacement landfill unit	___	___	___	___	N/A
D-6b(4)	Exemption for monofills	___	___	___	___	N/A
D-6b(5)	Groundwater monitoring exemption	___	___	___	___	N/A
D-6b(5)(a)	Engineered structure	___	___	___	___	N/A
D-6b(5)(b)	No liquid waste	___	___	___	___	N/A
D-6b(5)(c)	Exclusion of liquids	___	___	___	___	N/A
D-6b(5)(d)	Containment system	___	___	___	___	N/A
D-6b(5)(e)	Leak detection system	___	___	___	___	N/A
D-6b(5)(f)	Operation of leak detection system	___	___	___	___	N/A
D-6b(5)(g)	No migration	___	___	___	___	N/A
D-6c	Liner system, general items	___	___	___	___	N/A
D-6c(1)	Liner system description	___	___	___	___	N/A
D-6c(2)	Liner system location relative to high water table	___	___	___	___	N/A
D-6c(3)	Loads on liner system	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6c(4)	Liner system coverage	____	____	____	____	N/A
D-6c(5)	Liner system exposure prevention	____	____	____	____	N/A
D-6d	Liner system, foundation	____	____	____	____	N/A
D-6d(1)	Foundation description	____	____	____	____	N/A
D-6d(2)	Subsurface exploration data	____	____	____	____	N/A
D-6d(3)	Laboratory testing data	____	____	____	____	N/A
D-6d(4)	Engineering analyses	____	____	____	____	N/A
D-6d(4)(a)	Settlement potential	____	____	____	____	N/A
D-6d(4)(b)	Bearing capacity	____	____	____	____	N/A
D-6d(4)(c)	Stability of landfill slopes	____	____	____	____	N/A
D-6d(4)(d)	Potential for excess hydrostatic or gas pressure	____	____	____	____	N/A
D-6e	Liner system, liners	____	____	____	____	N/A
D-6e(1)	Synthetic liners	____	____	____	____	N/A
D-6e(1)(a)	Synthetic liner compatibility data	____	____	____	____	N/A
D-6e(1)(b)	Synthetic liner strength	____	____	____	____	N/A
D-6e(1)(c)	Synthetic liner bedding	____	____	____	____	N/A
D-6e(2)	Soil liners	____	____	____	____	N/A
D-6e(2)(a)	Material testing data	____	____	____	____	N/A
D-6e(2)(b)	Soil liner compatibility data	____	____	____	____	N/A
D-6e(2)(c)	Soil liner strength	____	____	____	____	N/A
D-6f	Liner system, leachate collection/detection systems	____	____	____	____	N/A
D-6f(1)	System operation and design	____	____	____	____	N/A
D-6f(2)	Drainage material	____	____	____	____	N/A
D-6f(3)	Grading and drainage	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6f(4)	Maximum leachate head	____	____	____	____	N/A
D-6f(5)	System compatibility	____	____	____	____	N/A
D-6f(6)	System strength	____	____	____	____	N/A
D-6f(6)(a)	Stability of drainage layers	____	____	____	____	N/A
D-6f(6)(b)	Strength of piping	____	____	____	____	N/A
D-6f(7)	Prevention of clogging	____	____	____	____	N/A
D-6f(8)	Liquid removal	____	____	____	____	N/A
D-6f(9)	Location relative to water table	____	____	____	____	N/A
D-6g	Liner system, construction and maintenance	____	____	____	____	N/A
D-6g(1)	Material specifications	____	____	____	____	N/A
D-6g(1)(a)	Synthetic liners	____	____	____	____	N/A
D-6g(1)(b)	Soil liners	____	____	____	____	N/A
D-6g(1)(c)	Leachate collection/ detection systems	____	____	____	____	N/A
D-6g(2)	Construction specifications	____	____	____	____	N/A
D-6g(2)(a)	Liner system foundation	____	____	____	____	N/A
D-6g(2)(b)	Soil liner	____	____	____	____	N/A
D-6g(2)(c)	Synthetic liners	____	____	____	____	N/A
D-6g(2)(d)	Leachate collection/ detection systems	____	____	____	____	N/A
D-6g(3)	Construction quality assurance program	____	____	____	____	N/A
D-6g(4)	Maintenance procedures for leachate collection/ detection system	____	____	____	____	N/A
D-6g(5)	Liner repairs during operations	____	____	____	____	N/A
D-6h	Action leakage rate	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6h(1)	Determination of action leakage rate	___	___	___	___	N/A
D-6h(2)	Monitoring of leakage	___	___	___	___	N/A
D-6i	Leakage response action plan	___	___	___	___	N/A
D-6i(1)	Response actions	___	___	___	___	N/A
D-6i(2)	Leak and/or remedial determinations	___	___	___	___	N/A
D-6i(3)	Notifications	___	___	___	___	N/A
D-6j	Run-on and run-off control systems	___	___	___	___	N/A
D-6j(1)	Run-on control system	___	___	___	___	N/A
D-6j(1)(a)	Design and performance	___	___	___	___	N/A
D-6j(1)(b)	Calculation of peak flow	___	___	___	___	N/A
D-6j(2)	Run-off control system	___	___	___	___	N/A
D-6j(2)(a)	Design and performance	___	___	___	___	N/A
D-6j(2)(b)	Calculation of peak flow	___	___	___	___	N/A
D-6j(3)	Management of collection and holding units	___	___	___	___	N/A
D-6j(4)	Construction	___	___	___	___	N/A
D-6j(5)	Maintenance	___	___	___	___	N/A
D-6k	Control of wind dispersal	___	___	___	___	N/A
D-6l	Liquids in landfills	___	___	___	___	N/A
D-6l(1)	Bulk or noncontainerized free liquids	___	___	___	___	N/A
D-6l(2)	Containers holding free liquids	___	___	___	___	N/A
D-6l(3)	Restriction to small containers	___	___	___	___	N/A
D-6l(4)	Nonstorage containers	___	___	___	___	N/A
D-6l(5)	Lab packs	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-6l(5)(a)	Inside containers	____	____	____	____	N/A
D-6l(5)(b)	Overpack	____	____	____	____	N/A
D-6l(5)(c)	Sorbent material	____	____	____	____	N/A
D-6l(5)(d)	Incompatible wastes	____	____	____	____	N/A
D-6l(5)(e)	Reactive wastes	____	____	____	____	N/A
D-6m	Containerized wastes	____	____	____	____	N/A
D-6n	Special waste management plan for landfills containing wastes F020, F021, F022, F023, F026 and F027	____	____	____	____	N/A
D-6n(1)	Wastes description	____	____	____	____	N/A
D-6n(2)	Soil description	____	____	____	____	N/A
D-6n(3)	Mobilizing properties	____	____	____	____	N/A
D-7	Land treatment	____	____	____	____	N/A
D-7a	Treatment demonstration	____	____	____	____	N/A
D-7a(1)	Demonstration wastes	____	____	____	____	N/A
D-7a(2)	Demonstration data sources	____	____	____	____	N/A
D-7a(2)(a)	Existing literature	____	____	____	____	N/A
D-7a(2)(b)	Operating data	____	____	____	____	N/A
D-7a(3)	Laboratory/field testing programs	____	____	____	____	N/A
D-7a(3)(a)	Toxicity testing	____	____	____	____	N/A
D-7a(3)(b)	Field plot testing	____	____	____	____	N/A
D-7a(3)(c)	Laboratory testing	____	____	____	____	N/A
D-7b	Land treatment program	____	____	____	____	N/A
D-7b(1)	List of wastes	____	____	____	____	N/A
D-7b(2)	Operating procedures	____	____	____	____	N/A
D-7b(2)(a)	Waste application rates	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-7b(2)(b)	Waste application methods	___	___	___	___	N/A
D-7b(2)(c)	Control of soil pH	___	___	___	___	N/A
D-7b(2)(d)	Enhancement of microbial or chemical reactions	___	___	___	___	N/A
D-7b(2)(e)	Control of soil moisture	___	___	___	___	N/A
D-7c	Unsaturated zone monitoring plan	___	___	___	___	N/A
D-7c(1)	Soil-pore liquid monitoring	___	___	___	___	N/A
D-7c(1)(a)	Sampling location	___	___	___	___	N/A
D-7c(1)(b)	Sampling frequency	___	___	___	___	N/A
D-7c(1)(c)	Sampling equipment	___	___	___	___	N/A
D-7c(1)(d)	Sampling equipment installation	___	___	___	___	N/A
D-7c(1)(e)	Sampling procedures	___	___	___	___	N/A
D-7c(1)(f)	Analytical procedures	___	___	___	___	N/A
D-7c(1)(g)	Chain-of-custody	___	___	___	___	N/A
D-7c(1)(h)	Background values	___	___	___	___	N/A
D-7c(1)(i)	Statistical methods	___	___	___	___	N/A
D-7c(i)(j)	Justification of principal hazardous constituents	___	___	___	___	N/A
D-7c(2)	Soil core monitoring	___	___	___	___	N/A
D-7c(2)(a)	Sampling location	___	___	___	___	N/A
D-7c(2)(b)	Sampling frequency	___	___	___	___	N/A
D-7c(2)(c)	Sampling equipment	___	___	___	___	N/A
D-7c(2)(d)	Sampling procedures	___	___	___	___	N/A
D-7c(2)(e)	Analytical procedures	___	___	___	___	N/A
D-7c(2)(f)	Chain-of-custody	___	___	___	___	N/A
D-7c(2)(g)	Background values	___	___	___	___	N/A
D-7c(2)(h)	Statistical methods	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-7c(2)(i)	Justification of principal hazardous constituents	____	____	____	____	N/A
D-7d	Treatment zone description	____	____	____	____	N/A
D-7d(1)	Horizontal and vertical dimensions	____	____	____	____	N/A
D-7d(2)	Soil survey	____	____	____	____	N/A
D-7d(3)	Soil series descriptions	____	____	____	____	N/A
D-7d(4)	Soil sampling data	____	____	____	____	N/A
D-7d(5)	Seasonal high water table	____	____	____	____	N/A
D-7e	Unit design, construction, operation, and maintenance	____	____	____	____	N/A
D-7e(1)	Run-on control	____	____	____	____	N/A
D-7e(2)	Run-off control	____	____	____	____	N/A
D-7e(3)	Minimizing hazardous constituent run-off	____	____	____	____	N/A
D-7e(4)	Management of accumulated run-on and run-off	____	____	____	____	N/A
D-7e(5)	Control of wind dispersal	____	____	____	____	N/A
D-7f	Food chain crops	____	____	____	____	N/A
D-7f(1)	Food chain crop demonstration	____	____	____	____	N/A
D-7f(1)(a)	Demonstration basis	____	____	____	____	N/A
D-7f(1)(b)	Test procedures	____	____	____	____	N/A
D-7f(2)	Cadmium-bearing wastes	____	____	____	____	N/A
D-7f(2)(a)	Crops for human consumption	____	____	____	____	N/A
D-7f(2)(b)	Animal feed	____	____	____	____	N/A
D-7g	Special Waste management plan for land treatment units containing wastes F020, F021, F022, F023, F026, and F027	____	____	____	____	N/A
D-7g(1)	Waste description	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-7g(2)	Soil description	____	____	____	____	N/A
D-7g(3)	Mobilizing properties	____	____	____	____	N/A
D-7g(4)	Additional management techniques	____	____	____	____	N/A
D-7h	Incompatible wastes	____	____	____	____	N/A
D-8	Miscellaneous units	____	____	____	____	N/A
D-8a	Description of miscellaneous units	____	____	____	____	N/A
D-8b	Waste characterization	____	____	____	____	N/A
D-8c	Treatment effectiveness	____	____	____	____	N/A
D-8d	Environmental performance standards for miscellaneous units	____	____	____	____	N/A
D-8d(1)	Protection of groundwater and subsurface environment	____	____	____	____	N/A
D-8d(1)(a)	Environmental assessment	____	____	____	____	N/A
D-8d(1)(b)	Performance standards	____	____	____	____	N/A
D-8d(2)	Protection of surface water, wetlands, and soil surface	____	____	____	____	N/A
D-8d(2)(a)	Environmental assessment	____	____	____	____	N/A
D-8d(2)(b)	Performance standards	____	____	____	____	N/A
D-8d(3)	Protection of the atmosphere	____	____	____	____	N/A
D-8d(3)(a)	Environmental assessment	____	____	____	____	N/A
D-8d(3)(b)	Performance standards	____	____	____	____	N/A
D-8e	Monitoring, analysis inspection, response, reporting, and corrective action	____	____	____	____	N/A
D-8e(1)	Elements of a monitoring program	____	____	____	____	N/A
D-8e(2)	Air monitoring alternatives	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-9	Boilers and Industrial Furnaces (BIFs)	___	___	___	___	N/A
D-9a	Waivers/exemptions	___	___	___	___	N/A
D-9a(1)	Waiver of DRE trial burn for boilers	___	___	___	___	N/A
D-9a(2)	Low risk waste exemption	___	___	___	___	N/A
D-9a(3)	Waiver of particulate matter standard	___	___	___	___	N/A
D-9a(4)	Waiver of trial burn for metals	___	___	___	___	N/A
D-9a(5)	Waiver of trial burn for HCl/Cl_2	___	___	___	___	N/A
D-9b	Pretrial burn requirements for new BIFs	___	___	___	___	N/A
D-9b(1)	Pretrial burn requirements for new BIFs - organic emission standards	___	___	___	___	N/A
D-9b(2)	Pretrial burn requirements for new BIFs - PM emissions standards	___	___	___	___	N/A
D-9b(3)	Pretrial burn requirements for new BIFs - metals emissions standards	___	___	___	___	N/A
D-9b(4)	Pretrial burn requirements for new BIFs - alternative metals approach	___	___	___	___	N/A
D-9b(5)	Pretrial burn requirements for new BIFs - hydrogen chloride/chlorine emissions standards	___	___	___	___	N/A
D-9b(6)	Pretrial burn requirements for new BIFs - fugitive emissions	___	___	___	___	N/A
D-9b(7)	Pretrial burn requirements for new BIFs - automatic waste feed cutoff	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-9b(8)	Pretrial burn requirements for new BIFs - monitoring requirements	____	____	____	____	N/A
D-9c	Trial burn plan requirements for all BIFs	____	____	____	____	N/A
D-9d	Trial burn results	____	____	____	____	N/A
D-9e	Post-trial burn requirements for new BIFs	____	____	____	____	N/A
D-9f	Data in lieu of trial burn	____	____	____	____	N/A
D-9g	Alternative HC limit for industrial furnaces with organic matter in raw materials	____	____	____	____	N/A
D-9h	Alternative metals implementation approach	____	____	____	____	N/A
D-9i	Monitoring requirements	____	____	____	____	N/A
D-9j	Automatic waste feed cutoff system	____	____	____	____	N/A
D-9k	Direct transfer standards	____	____	____	____	N/A
D-9k(1)	Direct transfer standards - containment system	____	____	____	____	N/A
D-9k(2)	Direct transfer standards - condition of containers	____	____	____	____	N/A
D-9k(3)	Direct transfer standards - compatibility of waste with container	____	____	____	____	N/A
D-9k(4)	Direct transfer standards - management of containers	____	____	____	____	N/A
D-9k(5)	Direct transfer standards - special requirements of ignitable or reactive waste	____	____	____	____	N/A
D-9k(6)	Direct transfer standards - special requirements of incompatible wastes	____	____	____	____	N/A
D-9k(7)	Direct transfer standards - closure	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-9k(8)	Direct transfer standards - secondary containment requirements	___	___	___	___	N/A
D-9l	Bevill residues	___	___	___	___	N/A
D-10	Containment buildings	___	___	___	___	N/A
D-10a	Containment building description	___	___	___	___	N/A
D-10a(1)	Construction	___	___	___	___	N/A
D-10a(2)	Strength requirements	___	___	___	___	N/A
D-10a(3)	Design requirements for units not managing liquids	___	___	___	___	N/A
D-10a(3)(a)	Primary barrier	___	___	___	___	N/A
D-10a(4)	Design requirements for units managing liquids	___	___	___	___	N/A
D-10a(4)(a)	Primary barrier	___	___	___	___	N/A
D-10a(4)(b)	Liquid collection system	___	___	___	___	N/A
D-10a(4)(c)	Secondary containment system	___	___	___	___	N/A
D-10a(4)(c)(i)	Leak detection system	___	___	___	___	N/A
D-10a(4)(c)(ii)	Secondary barrier	___	___	___	___	N/A
D-10a(4)(d)	Temporary variance from secondary containment requirements	___	___	___	___	N/A
D-10a(4)(e)	Waiver of secondary containment requirements	___	___	___	___	N/A
D-10a(5)	Design of units managing both liquids and non-liquids in the same unit	___	___	___	___	N/A
D-10a(6)	Compatibility of structure with wastes	___	___	___	___	N/A
D-10a(7)	Fugitive dust emissions	___	___	___	___	N/A
D-10a(8)	Structural integrity requirements	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
D-10a(9)	Certification of design					N/A
D-10b	Containment building operations					N/A
D-10b(1)	Primary barrier integrity					N/A
D-10b(2)	Volume of waste					N/A
D-10b(3)	Tracking of waste out of unit					N/A
D-10b(4)	Liquids removal					N/A
D-10b(5)	Management of incompatible wastes					N/A
D-10b(6)	Management of liquids and non-liquids in the same unit					N/A
D-10b(7)	Fugitive dust emissions					N/A
D-10b(8)	Treatment of wastes					N/A
D-10b(9)	Equipment decontamination					N/A
D-10c	Containment buildings as tank secondary containment					N/A
E.	GROUNDWATER MONITORING					
E-1	Exemption from groundwater protection requirements					N/A
E-1a	Waste piles					N/A
E-1b	Landfill					N/A
E-1c	No migration					N/A
E-2	Interim status groundwater monitoring data					N/A
E-2a	Description of wells					N/A
E-2b	Description of sampling/ analysis procedures					N/A
E-2c	Monitoring data					N/A
E-2d	Statistical procedures					N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-2e	Groundwater assessment plan	____	____	____	____	N/A
E-3	General hydrogeologic information	____	____	____	____	N/A
E-4	Topographic map requirements	____	____	____	____	N/A
E-5	Contaminant plume description	____	____	____	____	N/A
E-6	General monitoring program requirements	____	____	____	____	N/A
E-6a	Description of wells	____	____	____	____	N/A
E-6b	Description of sampling/ analysis procedures	____	____	____	____	N/A
E-6c	Procedures for establishing background quality	____	____	____	____	N/A
E-6d	Statistical procedures	____	____	____	____	N/A
E-6d(1)	Parametric analysis of variance (ANOVA)	____	____	____	____	N/A
E-6d(2)	Non-parametric ANOVA (based on ranks)	____	____	____	____	N/A
E-6d(3)	Tolerance or prediction interval procedure	____	____	____	____	N/A
E-6d(4)	Control chart approach	____	____	____	____	N/A
E-6d(5)	Alternative approach	____	____	____	____	N/A
E-7	Detection monitoring program	____	____	____	____	N/A
E-7a	Indicator parameters, waste constituents, reaction products to be monitored	____	____	____	____	N/A
E-7b	Groundwater monitoring system	____	____	____	____	N/A
E-7c	Background groundwater concentration values for proposed parameters	____	____	____	____	N/A
E-7d	Proposed sampling and analysis procedures	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-7e	Statistically significant increase in any constituent or parameter identified at any compliance point monitoring well	____	____	____	____	N/A
E-8	Compliance monitoring program	____	____	____	____	N/A
E-8a	Description of the monitoring program	____	____	____	____	N/A
E-8a(1)	Waste description	____	____	____	____	N/A
E-8a(2)	Characterization of contaminated groundwater	____	____	____	____	N/A
E-8a(3)	Hazardous constituents to be monitored in compliance program	____	____	____	____	N/A
E-8a(4)	Concentration limits	____	____	____	____	N/A
E-8a(5)	Alternate concentration limits	____	____	____	____	N/A
E-8a(5)(i)	Adverse effects on groundwater quality	____	____	____	____	N/A
E-8a(5)(ii)	Potential adverse effects	____	____	____	____	N/A
E-8a(6)	Engineering report describing groundwater monitoring system	____	____	____	____	N/A
E-8a(7)	Proposed sampling and statistical analysis procedures for groundwater data	____	____	____	____	N/A
E-8a(8)	Groundwater protection standard exceeded at compliance point monitoring well	____	____	____	____	N/A
E-9	Corrective action program	____	____	____	____	N/A
E-9a	Characterization of contaminated groundwater	____	____	____	____	N/A
E-9b	Concentration limits	____	____	____	____	N/A
E-9c	Alternate concentration limits	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
E-9c(1)	Adverse effects on groundwater quality	____	____	____	____	N/A
E-9c(2)	Potential adverse effects	____	____	____	____	N/A
E-9d	Corrective action plan	____	____	____	____	N/A
E-9d(1)	Location	____	____	____	____	N/A
E-9d(2)	Construction detail	____	____	____	____	N/A
E-9d(3)	Plans for removing wastes	____	____	____	____	N/A
E-9d(4)	Treatment technologies	____	____	____	____	N/A
E-9d(5)	Effectiveness of correction program	____	____	____	____	N/A
E-9d(6)	Reinjection system	____	____	____	____	N/A
E-9d(7)	Additional hydrogeologic data	____	____	____	____	N/A
E-9d(8)	Operation and maintenance	____	____	____	____	N/A
E-9d(9)	Closure and post-closure plans	____	____	____	____	N/A
E-9e	Groundwater monitoring program	____	____	____	____	N/A
E-9e(1)	Description of monitoring system	____	____	____	____	N/A
E-9e(2)	Description of sampling and analysis procedures	____	____	____	____	N/A
E-9e(3)	Monitoring data and statistical analysis procedures	____	____	____	____	N/A
E-9e(4)	Reporting requirements	____	____	____	____	N/A
F. PROCEDURES TO PREVENT HAZARDS						
F-1	Security	____	____	____	____	Section 5.1
F-1a	Security procedures and equipment	____	____	____	____	Section 5.1
F-1a(1)	24-hour surveillance system	____	____	____	____	Section 5.1(a)
F-1a(2)(a)	Barrier	____	____	____	____	Section 5.1(b)
F-1a(2)(b)	Means to control entry	____	____	____	____	Section 5.1(b)

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-1a(3)	Warning signs	___	___	___	___	Section 5.1(c)
F-1b	Waiver	___	___	___	___	N/A
F-1b(1)	Injury to intruder	___	___	___	___	N/A
F-1b(2)	Violation caused by intruder	___	___	___	___	N/A
F-2	Inspection schedule	___	___	___	___	Section 5.2
F-2a	General inspection requirements	___	___	___	___	Section 5.2(a), Table 5-1
F-2a(1)	Types of problems	___	___	___	___	Section 5.2(a), Table 5-2
F-2a(2)	Frequency of inspections	___	___	___	___	Section 5.2(a), Table 5-1
F-2b(1)	Container inspection	___	___	___	___	Section 5.2(b)
F-2b(2)	Tank system inspection	___	___	___	___	N/A
F-2b(2)(a)	Tank system external corrosion and releases	___	___	___	___	N/A
F-2b(2)(b)	Tank system construction materials and surrounding area	___	___	___	___	N/A
F-2b(2)(c)	Tank system overfilling control equipment	___	___	___	___	N/A
F-2b(2)(d)	Tank system monitoring and leak detection equipment	___	___	___	___	N/A
F-2b(2)(e)	Tank system cathodic protection	___	___	___	___	N/A
F-2b(3)	Waste pile inspection	___	___	___	___	N/A
F-2b(3)(a)	Run-on and run-off control system	___	___	___	___	N/A
F-2b(3)(b)	Wind dispersal system	___	___	___	___	N/A
F-2b(3)(c)	Leachate collection and removal system	___	___	___	___	N/A
F-2b(4)	Surface impoundment inspection	___	___	___	___	N/A
F-2b(4)(a)	Condition assessment	___	___	___	___	N/A
F-2b(4)(a)(1)	Overtopping control system	___	___	___	___	N/A
F-2b(4)(a)(2)	Impoundment contents	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-2b(4)(a)(3)	Dikes and containment devices	____	____	____	____	N/A
F-2b(4)(b)	Structural integrity	____	____	____	____	N/A
F-2b(4)(c)	Leak detection system	____	____	____	____	N/A
F-2b(5)(a)	Incinerator and associated equipment	____	____	____	____	N/A
F-2b(5)(b)	Incinerator waste feed cut-off system and associated alarms	____	____	____	____	N/A
F-2b(6)	Landfill inspection	____	____	____	____	N/A
F-2b(6)(a)	Run-on and run-off control system	____	____	____	____	N/A
F-2b(6)(b)	Wind dispersal control system	____	____	____	____	N/A
F-2b(6)(c)	Leachate collection and removal system	____	____	____	____	N/A
F-2b(7)	Land treatment facility inspection	____	____	____	____	N/A
F-2b(7)(a)	Run-on and run-off control system	____	____	____	____	N/A
F-2b(7)(b)	Wind dispersal control system	____	____	____	____	N/A
F-2b(8)	Miscellaneous unit inspections	____	____	____	____	N/A
F-2b(9)	Boilers and industrial furnace inspections	____	____	____	____	N/A
F-2b(10)	Containment building inspections	____	____	____	____	N/A
F-3	Waiver or documentation of preparedness and prevention requirements	____	____	____	____	Section 5.3
F-3a	Equipment requirements	____	____	____	____	Section 5.3(a)
F-3a(1)	Internal communications	____	____	____	____	Section 5.3(a)(1)
F-3a(2)	External communications	____	____	____	____	Section 5.3(a)(2)
F-3a(3)	Emergency equipment	____	____	____	____	Section 5.3(a)(3)
F-3a(4)	Water for fire control	____	____	____	____	Section 5.3(a)(4)

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-3b	Aisle space requirement	____	____	____	____	Section 5.3(b)
F-4	Preventive procedures, structures, and equipment	____	____	____	____	Section 5.4
F-4a	Unloading operations	____	____	____	____	Section 5.4(a)
F-4b	Run-off	____	____	____	____	Section 5.4(b)
F-4c	Water supplies	____	____	____	____	Section 5.4(c)
F-4d	Equipment and power failure	____	____	____	____	Section 5.4(d)
F-4e	Personnel protective equipment	____	____	____	____	Section 5.4(e)
F-5	Prevention of reaction of ignitable, reactive, and incompatible wastes	____	____	____	____	Section 5.5
F-5a	Precautions to prevent ignition or reaction of ignitable or reactive wastes	____	____	____	____	Section 5.5(a)
F-5b	General precautions for handling ignitable or reactive waste and mixing of incompatible waste	____	____	____	____	Section 5.5(b)
F-5c	Management of ignitable or reactive wastes in containers	____	____	____	____	Section 5.5(a),(b),(c),and(d)
F-5d	Management of incompatible wastes in containers	____	____	____	____	Sections 5.5(c) and (d)
F-5e	Management of ignitable or reactive wastes in tank systems	____	____	____	____	N/A
F-5f	Management of incompatible wastes in tanks systems	____	____	____	____	N/A
F-5g	Management of ignitable or reactive wastes placed in waste piles	____	____	____	____	N/A
F-5h	Management of incompatible wastes placed in waste piles	____	____	____	____	N/A
F-5i	Management of ignitable or reactive wastes placed in surface impoundments	____	____	____	____	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
F-5j	Management of incompatible wastes placed in surface impoundments	___	___	___	___	N/A
F-5k	Management of ignitable or reactive wastes placed in landfills	___	___	___	___	N/A
F-5l	Management of incompatible wastes placed in landfills	___	___	___	___	N/A
F-5m	Management of ignitable or reactive wastes placed in land treatment units	___	___	___	___	N/A
F-5n	Management of incompatible wastes placed in land treatment units	___	___	___	___	N/A
F-5o	Management of incompatible wastes placed in containment building units	___	___	___	___	N/A
G. CONTINGENCY PLAN						
G-1	General information	___	___	___	___	Section 6.1
G-2	Emergency coordinators	___	___	___	___	Section 6.2
G-3	Implementation	___	___	___	___	Section 6.3
G-4	Emergency actions	___	___	___	___	Section 6.4
G-4a	Notification	___	___	___	___	Section 6.4a
G-4b	Identification of hazardous materials	___	___	___	___	Section 6.4b
G-4c	Assessment	___	___	___	___	Section 6.4c
G-4d	Control procedures	___	___	___	___	Section 6.4d
G-4e	Prevention of recurrence or spread of fires, explosions, or releases	___	___	___	___	Section 6.4e
G-4f	Storage and treatment of released material	___	___	___	___	Section 6.4f
G-4g	Incompatible waste	___	___	___	___	Section 6.4g

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
G-4h	Post-emergency equipment maintenance					Section 6.4h
G-4i	Container spills and leakage					Section 6.4i
G-4j	Tank spills and leakage					N/A
G-4j(1)	Stopping waste addition					N/A
G-4j(2)	Removing waste					N/A
G-4j(3)	Containment of visible releases					N/A
G-4j(4)	Notifications, reports					N/A
G-4j(5)	Provision of secondary containment, repair or closure					N/A
G-4k	Surface impoundments spills and leakage					N/A
G-4k(1)	Emergency repairs					N/A
G-4k(1)(a)	Stopping waste addition					N/A
G-4k(1)(b)	Containing leaks					N/A
G-4k(1)(c)	Stopping leaks					N/A
G-4k(1)(d)	Preventing catastrophic failure					N/A
G-4k(1)(e)	Emptying the impoundment					N/A
G-4k(2)	Certification					N/A
G-4k(3)	Repairs as a result of sudden drop					N/A
G-4k(3)(a)	Existing portions of surface impoundment					N/A
G-4k(3)(b)	Other portions of surface impoundment					N/A
G-4l	Containment building leaks					N/A
G-4l(1)	Repair of containment building					N/A
G-4l(2)	Certification following repair					N/A
G-5	Emergency equipment					Section 6.5

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
G-6	Coordination agreements	___	___	___	___	Section 6.6
G-7	Evacuation plan	___	___	___	___	Section 6.7
G-8	Required reports	___	___	___	___	Section 6.8
H. PERSONNEL TRAINING						
H-1	Outline of the training program	___	___	___	___	Section 7.1 and 7.2
H-1a	Job title/job description	___	___	___	___	Section 7.1a
H-1b	Training content, frequency, and techniques	___	___	___	___	Section 7.1b(1), (2), (3)
H-1c	Training director	___	___	___	___	Section 7.1c
H-1d	Relevance of training to job position	___	___	___	___	Section 7.1d
H-1e	Training for emergency response	___	___	___	___	Section 7.1e and 7.2
H-2	Implementation of training program	___	___	___	___	Section 7.1f and 7.2
I. CLOSURE PLANS, POST-CLOSURE PLANS AND FINANCIAL REQUIREMENTS						
I-1	Closure plans	___	___	___	___	Section 8
I-1a	Closure performance standard	___	___	___	___	Section 8.1a
I-1b	Partial closure and final closure activities	___	___	___	___	Section 8.1b
I-1c	Maximum waste inventory	___	___	___	___	Section 8.1c
I-1d	Schedule for closure	___	___	___	___	Section 8.1e
I-1d(1)	Time allowed for closure	___	___	___	___	Section 8.1e
I-1d(1)(a)	Extension for closure time	___	___	___	___	N/A
I-1e	Closure procedures	___	___	___	___	Sections 8.1d(1), (2), (3)
I-1e(1)	Inventory removal	___	___	___	___	Section 8.1d(1)

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-1e(2)	Disposal or decontamination of equipment, structures and soils					Sections 8.1d(2) and (3)
I-1e(3)	Closure of disposal units/ contingent closures					N/A
I-1e(3)(a)	Disposal impoundments					N/A
I-1e(3)(a)(i)	Elimination of liquids					N/A
I-1e(3)(a)(ii)	Waste stabilization					N/A
I-1e(3)(b)	Cover design					N/A
I-1e(3)(c)	Minimization of liquid migration					N/A
I-1e(3)(d)	Maintenance needs					N/A
I-1e(3)(e)	Drainage and erosion					N/A
I-1e(3)(f)	Settlement and subsidence					N/A
I-1e(3)(g)	Cover permeability					N/A
I-1e(3)(h)	Freeze/thaw effects					N/A
I-1e(4)	Closure of containers					N/A
I-1e(5)	Closure of tanks					N/A
I-1e(6)	Closure of waste piles					N/A
I-1e(7)	Closure of surface impoundments					N/A
I-1e(8)	Closure of incinerators					N/A
I-1e(9)	Closure of landfills					N/A
I-1e(10)	Closure of land treatment facilities					N/A
I-1e(10)(a)	Continuance of treatment					N/A
I-1e(10)(b)	Vegetative cover					N/A
I-1e(11)	Closure of miscellaneous units					N/A
I-1e(12)	Closure of boilers and industrial furnaces (BIFs)					N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
G-6	Coordination agreements	___	___	___	___	Section 6.6
G-7	Evacuation plan	___	___	___	___	Section 6.7
G-8	Required reports	___	___	___	___	Section 6.8
H. PERSONNEL TRAINING						
H-1	Outline of the training program	___	___	___	___	Section 7.1 and 7.2
H-1a	Job title/job description	___	___	___	___	Section 7.1a
H-1b	Training content, frequency, and techniques	___	___	___	___	Section 7.1b(1), (2), (3)
H-1c	Training director	___	___	___	___	Section 7.1c
H-1d	Relevance of training to job position	___	___	___	___	Section 7.1d
H-1e	Training for emergency response	___	___	___	___	Section 7.1e and 7.2
H-2	Implementation of training program	___	___	___	___	Section 7.1f and 7.2
I. CLOSURE PLANS, POST-CLOSURE PLANS AND FINANCIAL REQUIREMENTS						
I-1	Closure plans	___	___	___	___	Section 8
I-1a	Closure performance standard	___	___	___	___	Section 8.1a
I-1b	Partial closure and final closure activities	___	___	___	___	Section 8.1b
I-1c	Maximum waste inventory	___	___	___	___	Section 8.1c
I-1d	Schedule for closure	___	___	___	___	Section 8.1e
I-1d(1)	Time allowed for closure	___	___	___	___	Section 8.1e
I-1d(1)(a)	Extension for closure time	___	___	___	___	N/A
I-1e	Closure procedures	___	___	___	___	Sections 8.1d(1), (2), (3)
I-1e(1)	Inventory removal	___	___	___	___	Section 8.1d(1)

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-1e(2)	Disposal or decontamination of equipment, structures and soils	___	___	___	___	Sections 8.1d(2) and (3)
I-1e(3)	Closure of disposal units/ contingent closures	___	___	___	___	N/A
I-1e(3)(a)	Disposal impoundments	___	___	___	___	N/A
I-1e(3)(a)(i)	Elimination of liquids	___	___	___	___	N/A
I-1e(3)(a)(ii)	Waste stabilization	___	___	___	___	N/A
I-1e(3)(b)	Cover design	___	___	___	___	N/A
I-1e(3)(c)	Minimization of liquid migration	___	___	___	___	N/A
I-1e(3)(d)	Maintenance needs	___	___	___	___	N/A
I-1e(3)(e)	Drainage and erosion	___	___	___	___	N/A
I-1e(3)(f)	Settlement and subsidence	___	___	___	___	N/A
I-1e(3)(g)	Cover permeability	___	___	___	___	N/A
I-1e(3)(h)	Freeze/thaw effects	___	___	___	___	N/A
I-1e(4)	Closure of containers	___	___	___	___	Section 8.1d(3)
I-1e(5)	Closure of tanks	___	___	___	___	N/A
I-1e(6)	Closure of waste piles	___	___	___	___	N/A
I-1e(7)	Closure of surface impoundments	___	___	___	___	N/A
I-1e(8)	Closure of incinerators	___	___	___	___	N/A
I-1e(9)	Closure of landfills	___	___	___	___	N/A
I-1e(10)	Closure of land treatment facilities	___	___	___	___	N/A
I-1e(10)(a)	Continuance of treatment	___	___	___	___	N/A
I-1e(10)(b)	Vegetative cover	___	___	___	___	N/A
I-1e(11)	Closure of miscellaneous units	___	___	___	___	N/A
I-1e(12)	Closure of boilers and industrial furnaces (BIFs)	___	___	___	___	N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-1e(13)	Closure of containment buildings					N/A
I-2	Post-closure plan/ contingent post-closure					N/A
I-2a	Inspection plan					N/A
I-2b	Monitoring plan					N/A
I-2c	Maintenance plan					N/A
I-2d	Land treatment					N/A
I-2e	Post-closure care for miscellaneous units					N/A
I-2f	Post-closure security					N/A
I-2g	Post-closure contact					N/A
I-3	Notices required for disposal facilities					N/A
I-3a	Certification of closure					Section 8.1d(3)
I-3b	Survey plat					N/A
I-3c	Post-closure certification					N/A
I-3d	Post-closure notices					N/A
I-4	Closure cost estimate					Section 8.2a
I-5	Financial assurance mechanism for closure					Section 9
I-5a	Closure trust fund					N/A
I-5b	Surety bond					N/A
I-5b(1)	Surety bond guaranteeing payment into a closure trust fund					N/A
I-5b(2)	Surety bond guaranteeing performance of closure					N/A
I-5c	Closure letter of credit					
I-5d	Closure insurance					N/A

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-5e	Financial test and corporate guarantee for closure					Section 9
I-5f	Use of multiple financial mechanisms					N/A
I-5g	Use of financial mechanism for multiple facilities					N/A
I-6	Post-closure cost estimate					N/A
I-7	Financial assurance mechanism for post-closure care					N/A
I-7a	Post-closure trust fund					N/A
I-7b	Surety bond					N/A
I-7b(1)	Surety bond guaranteeing payment into a post-closure trust fund					N/A
I-7b(2)	Surety bond guaranteeing performance of post-closure care					N/A
I-7c	Post-closure letter of credit					N/A
I-7d	Post-closure insurance					N/A
I-7e	Financial test and corporate guarantee for post-closure care					N/A
I-7f	Use of multiple financial mechanisms					N/A
I-7g	Use of a financial mechanism for multiple facilities					N/A
I-8	Liability requirements					Section 9
I-8a	Coverage for sudden accidental occurrences					N/A
I-8a(1)	Endorsement of certification					N/A
I-8a(2)	Financial test or corporate guarantee for liability coverage					Section 9

COMPLETENESS/TECHNICAL EVALUATION CHECKLIST

		Complete (Y/N)	Technically Adequate (Y/N)	See Attached Comment	See Attached Exhibit	Location of Information
I-8a(3)	Use of multiple insurance mechanisms					N/A
I-8b	Coverage for nonsudden accidental occurrences					N/A
I-8b(1)	Endorsement or certification					N/A
I-8b(2)	Financial test or corporate guarantee for liability coverage					N/A
I-8b(3)	Use of multiple insurance mechanisms					N/A
I-8c	Request for variance					N/A
I-9	Use of state-required mechanisms					N/A
I-9a	Use of state-required mechanisms					N/A
I-9b	State assumption of responsibility					N/A
J. CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS						
J-1	Solid waste management units					Section 10.1
J-1a	Characterize the solid waste management unit					Section 10.1a
J-1b	No solid waste management units					N/A
J-2	Releases					Section 10.2
J-2a	Characterize releases					Section 10.2
J-2b	No releases					Section 10.2
K. OTHER FEDERAL LAWS						Section 11
L. PART B CERTIFICATION						Section 1

Certification for the 10/28/96 Revisions

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

W. Michael Weaber

W. Michael Weaber
Vice President and
General Site Manager
Bayer Corporation
Miles Avenue Site

Date: October 28, 1996

2. FACILITY DESCRIPTION

2.1 General Description of Facility

Bayer Corporation is a research based company with major businesses in health care, chemicals and imaging technologies with facilities engaged in production, research, and development throughout the country. The largest Bayer manufacturing facility in Indiana is located at 1884 Miles Avenue in Elkhart, Indiana. The corporate headquarters for Bayer Corporation are in Pittsburgh, Pennsylvania. At the Elkhart location, the principle products are vitamins, effervescent tablets, antiseptics, and citric acid. Research and development is also carried out in medical diagnostic applications.

As a result of these manufacturing and R&D activities, Bayer generates small amounts of hazardous wastes. These wastes consist of solvents and miscellaneous laboratory chemicals. The wastes are removed from the laboratories and production operations on a routine basis and are stored in a completely enclosed building awaiting shipment to a permitted off site disposal facility.

This building, known as Building 35, is the facility for which this permit application renewal is being submitted. It was constructed in 1985 to house wastes generated from the Bayer operations at Miles Avenue as well as wastes generated by other Bayer locations in Northern Indiana. These other locations include the following plants: Elkhart, Middlebury Street; Mishawaka.

The final permit for Building 35 was issued on November 2, 1991, with an expiration date of November 2, 1996. The operations conducted and wastes stored in Building 35 have not changed significantly since the original permit was issued.

The primary wastes that are stored fall into three general categories:

1. Chlorinated solvents;
2. non-chlorinated solvents, and
3. miscellaneous laboratory chemicals.

The solvents are accumulated at satellite generation points around the site in two (2) and five (5) gallon containers and are subsequently transferred into 55-gallon drums at the storage facility. These drums are stored in Building 35 until shipped off site. Laboratory chemicals are separated by compatibility and stored in plastic bins, in Building 35, pending packaging for off site disposal.

In addition to these, small volumes of other wastes such as spent acids/bases, debris from abatement of lead paint containing materials, and mercury containing switches and thermostats are occasionally stored.

2.2 Topographic Map

Enclosed in Appendix B are topographic and other maps which show the following information:

Figure B-1: An aerial layout of the buildings and grounds at the Bayer Miles Avenue Facility. Building 35 is on C Street on the west side of the property near Oak Street.Print H-7346-4D

Note: Figure B-1 indicates several buildings designated as "Haarmann & Reimer"and"Solvay." Bayer divested its' acidulants business to Haarmann & Reimer Corporation, a wholly owned subsidiary of Bayer AG, Leverkusen, Germany (the parent company of Bayer Corporation). This covers the citric acid production facility at Miles Avenue. Bayer has also divested its' enzyme business to Solvay Enzyme Products Inc., a separate company not affiliated with Bayer Corporation or Bayer AG. The Bayer enzyme business unit was operated in Buildings 60, 61, 62, and 62A.

Figure B-2: Topographic map of Bayer facility and area surrounding Building 35. Print H-15320-01D

Figure B-3: An aerial layout of the properties adjacent to Bayer indicating the land use. Print H-8082-1D

Figure B-4: An aerial picture of the facility indicating the Bayer property boundaries and the immediate adjacent land owners as of October 4, 1990. Print H-14319-1F (See the note under B-1 above)

Figure B-5: Miles Avenue Facility Sewer Manhole Locations. NOTE: Building 35 is not tied into the sewer system. See 5.4c. Print H-7346-10D (2 drawings)

Figure B-6: Aerial print indicating surface water in the general area and withdrawal wells. Print H-8082-2D

Figure B-11: The loading/unloading area next to Building 35. Print B-14055-8D Note the function of the loading/ unloading pad is discussed in 4.1a(2). The function of the 1,000 gallon containment tank is discussed in 4.1a and 5.4c.

Figure B-14: Safety and Emergency Equipment in Building 35. Print X-11225-54B.

Figure B-17: The fire control facilities (i.e. the sprinkler system) for Building 35.

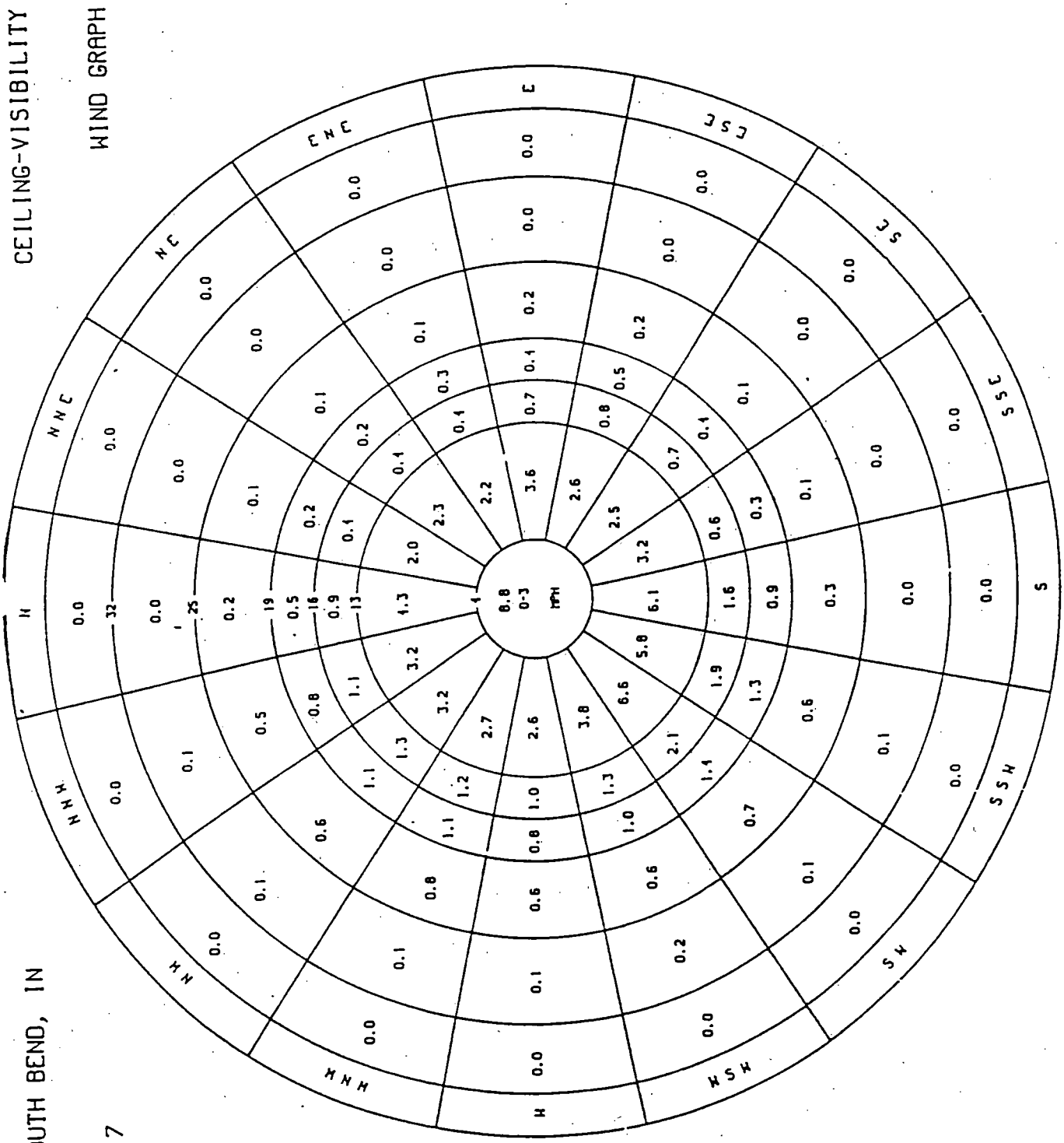
Please note that many of the drawings included in this submission refer to "Miles" or "Miles Laboratories" in their legends. These have not been updated to reflect the company name change to Bayer but are accurate in all other respects.

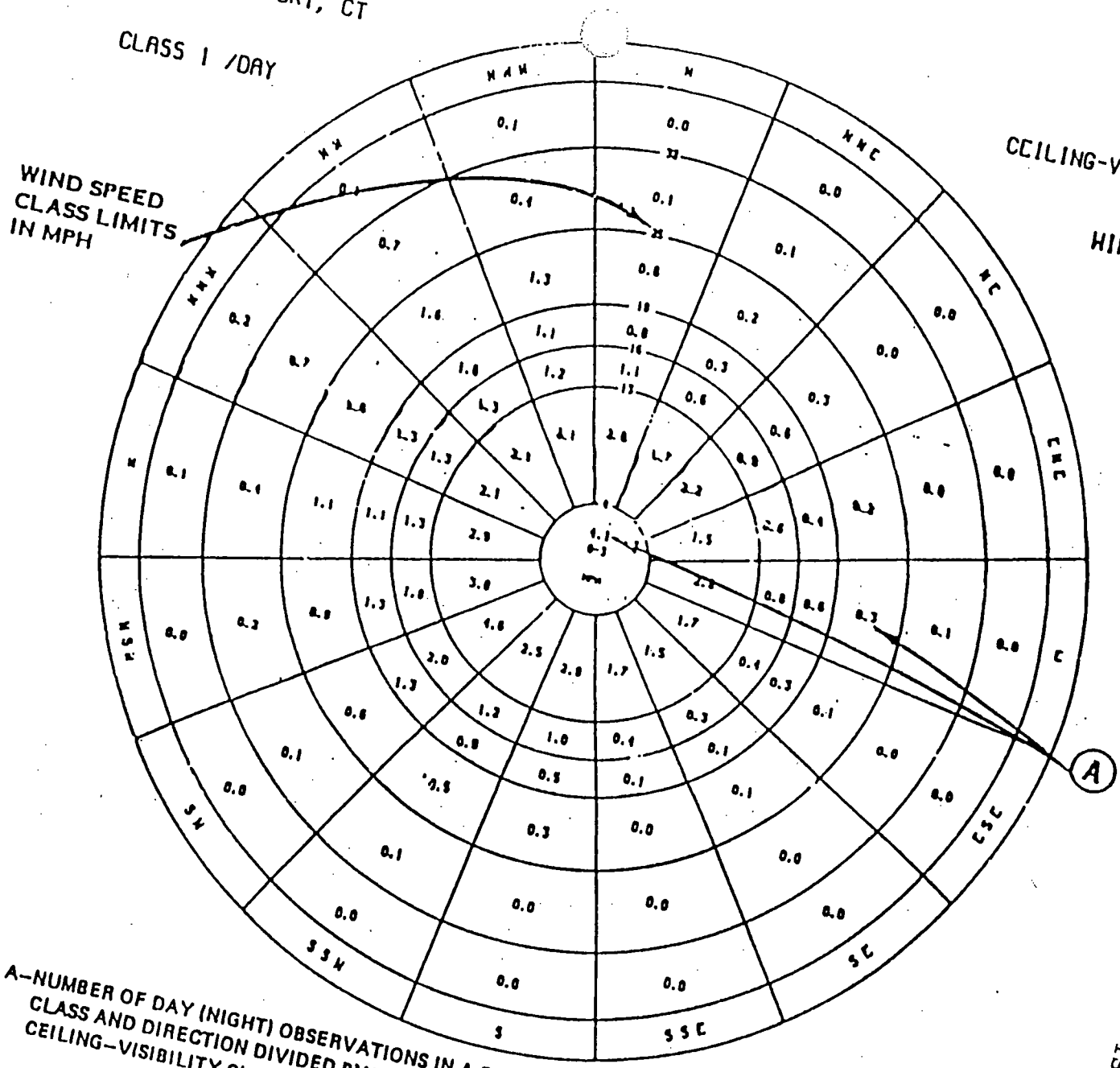
Attached is Figure 2-1, a wind rose for the Michiana Regional Airport at South Bend. It is approximately 20 miles from the Bayer facility.

2.3a Seismic Standard

The Bayer facility covered under this permit application is located in Elkhart County, Indiana. It is not listed in Appendix VI of 40 CFR 264 or 329 IAC 3-32-6 as one of the political jurisdictions requiring demonstration of compliance with the seismic standard.

FIGURE 2-1
WIND ROSE FOR SOUTH BEND, IN
AIRPORT (MICHIANA REGIONAL)





A–NUMBER OF DAY (NIGHT) OBSERVATIONS IN A GIVEN CEILING–VISIBILITY CLASS, WIND SPEED CLASS AND DIRECTION DIVIDED BY THE TOTAL NUMBER OF DAY (NIGHT) OBSERVATIONS IN CEILING–VISIBILITY CLASSES 1, 3–6, ALL WIND SPEED CLASSES AND DIRECTIONS TIMES 100.

FIGURE 2-2
WIND ROSE SAMPLE

2.3b Floodplain Standard

Attached in Appendix B, Figure B-7, is a Flood Insurance Rate Map for the city of Elkhart, Indiana as developed by the Federal Insurance Administration. The Bayer property, including the Building 35 hazardous waste storage facility, is completely outside of the 100 year floodplain area.

2.4a Traffic Patterns

The traffic patterns surrounding the Bayer facility and the hazardous waste storage building are shown in Appendix B, Figure B-8, Print H-7346-30D. Essentially, the traffic pattern in the vicinity of Bayer on all roads is two-way on two lane streets with the exception of Bristol Street where four lanes and a left turn lane are provided for two-way traffic. The traffic volume, based on data provided by the Michiana Area Council of Governments, is as follows:

1.	Oak Street	4,110	vehicles/day
2.	Randolph St.	1,170	"
3.	Michigan St.	6,300	"
4.	Bristol St.	24,700	"

Figures on Randolph, Michigan and Bristol Streets are from 1994 data. Oak Street figures are based on 1992 data.

Within the Bayer facility, traffic consists of employee cars, company vehicles, outside delivery trucks, contractor vehicles and construction equipment. There is a 15 mph speed limit on all plant property. Each intersection has either two-way or four-way stop signs. There are no traffic signals near the storage facility nor the entrances to Bayer property.

2.4b Access Road Surfacing and Load Bearing Capacity

All roads within the plant are constructed of asphalt with a load bearing capacity of 18,000 lbs. per axle. This is sufficient for the in-plant company vehicles used for transporting the waste and the contractors coming from off site to remove the waste in bulk tankers or in drums.

3. WASTE CHARACTERISTICS

3.1a Chemical and Physical Analyses

Bayer generates three primary categories of hazardous wastes. These are classified as:

(1) Chlorinated wastes containing predominantly solvents such as methylene chloride, chloroform, acetone and butyl acetate,

(2) non-chlorinated wastes containing predominantly solvents such as acetone, toluene, methanol, ethanol and cyclohexanone, and

(3) laboratory wastes containing small amounts of relatively pure materials common to a research and development lab.

The first two categories should be considered as general waste divisions rather than strict separations of chlorinated and non-chlorinated materials. Due to the laboratory operations generating the waste, each waste stream will have materials in it which are also in the other waste category. These separations are made more to ease our ability to dispose of the waste rather than segregate the materials into two compatibility groups. (Disposal facilities have limits on the halogen content of the wastes they accept for incineration).

All of these wastes are generated due to the research and development activities on-going at the Bayer Elkhart facility. Only small amounts of hazardous wastes are generated by the production operations at the Miles Avenue Plant. Information about each of these waste streams is given below.

Chlorinated Wastes:

These wastes are water miscible, and are comprised of one or two layers. The liquids can be a variety of colors from blue to yellow to colorless. Odors are essentially solvent sweet and mild. Most of the time, the wastes are partially water, yielding a specific gravity slightly above 1.0. Suspended solids are very low. The pH of the waste is between 5 and 9, per the Bayer Standard Laboratory Solvent Scrap Procedure. A summary of materials which are in the waste and the waste characteristics are listed in Figure 3-1.

CHLORINATED WASTE SOLVENT

COMPONENTS AND CHARACTERISTICS
Figure 3-1

Components	Range (Percent Volume)
Water	0-55
Acetone	0-12
Butyl Acetate	0-25
Carbon Tetrachloride	0-4
Chloroform	0-85
1,2-Dichloroethane	0-8
Ethanol	0-12
Isopropyl Alcohol	0-4
Methanol	0-5
Methylene Chloride	0-15
1,1,1-Trichloroethane	0-8
Toluene	0-5
Xylene	0-5

Components	Range (mg/L)
Arsenic	0-2
Barium	0-40
Cadmium	0-15
Chromium	0-40
Copper	0-25
Lead	0-10
Mercury	0-5
Nickel	0-8
Selenium	0-1
Silver	0-3
Thallium	0-2
Zinc	0-4

Components	Range
pH	5-9
Specific Gravity	1.1 - 1.4 g/mL
Cyanide	0-2 mg/kg
Sulfide	0-10 mg/kg
Ash content	1-2 %
Flashpoint	50 -100 °F
TOX	15-75 %Cl
BTU	3,500 - 6,000 per lb

The chlorinated wastes, which Bayer generates, are considered listed wastes from non-specific sources with waste codes of F001, F002, and F003. They are listed on the basis of their toxicity. Bayer has determined these wastes to be hazardous due to the presence or potential presence of the following materials:

a. Degreasing solvents from maintenance/shop activities such as 1,1,1-trichloroethane, and

b. solvents from lab activities such as methylene chloride.

There are also instances in which an alcohol, such as methanol or ethanol, is present in the waste. In those instances, the waste is also classified as DOT flammable and EPA ignitable (D001) with a flash point of less than 100°F.

Other characteristic waste codes which are applicable to this waste stream include the following:

Arsenic	D004
Cadmium	D006
Chromium	D007
Lead	D008
Mercury	D009
Benzene	D018
Carbon Tetrachloride	D019
Chloroform	D022
1,2-Dichloroethane	D028

Bayer has determined that these materials are hazardous wastes due to our familiarity with the processes generating the waste and laboratory analyses for the wastes. Laboratory reports for representative samples of the chlorinated waste are given in Appendix D.

The locations where the wastes are generated are shown in Figure 3-2. These are the forms used by the operators when picking up the waste.

Non-Chlorinated Wastes:

These wastes are water soluble, and are comprised of one or two layers. Colors range from off-blue to green to colorless. Odors are mild solvent sweet. Wastes are mostly water with a low suspended solids content. The flash point of the material is usually less than 100°F with a pH of between 5 and 9.

Figure 3-2

WASTE SOLVENT PICK-UP CHECKLIST
BUILDINGS: 1 - 2

Date: _____

BLDG.	FLOOR	LOCATION	NORMAL QUANTITY (NO. OF CONT./ GALLONS)	CHECKED		NO. OF CONTAINERS PICKED UP			DISPOSITION		
				AREA	pH	CHLOR	NON-CHLOR	OTHER	DRUM NO CHLOR/N-CHLOR	LAB CHEM AREA	OTHER
1	2nd	Deal Room	1-5								
1	2nd	Bactine Line	3-5								
1	3rd	1F.3.330	2-5								
1	3rd	1F.3.338 5-2	21-5								
2	1st	Paint Shop (Will Call)	1-55								
2	1st	Elec. Shop (Will Call)	1-2								
NOTE: Identify additional pick-ups here and explain non-solvent pick-ups and other dispositions.											

1. Do not pick up containers if they are not correctly labeled and have a neutralized pH. Notify area supervisor or site environmental engineer.

SIGNED: _____

2. If any containers are observed to be leaking, contain the leakage and contact the area supervisor or site environmental engineer.

DATE: _____

-SEE REVERSE SIDE FOR INSTRUCTIONS-

Figure 3-2 (con't.)

WASTE SOLVENT PICK-UP CHECKLIST
BUILDINGS: 3 - 4 - 44 - 120

Date: _____

BLDG.	FLOOR	LOCATION	NORMAL QUANTITY (NO. OF CONT./ GALLONS)	CHECKED		NO. OF CONTAINERS PICKED UP			DISPOSITION		
				AREA	pH	CHLOR	NON-CHLOR	OTHER	DRUM NO CHLOR/N-CHLOR	LAB CHEM AREA	OTHER
3	1st	3.1.28	2-5								
3	1st	3.1.110	2-5								
3	2nd	3.2.9	2-5								
3	2nd	3.2.75	1-5								
3	2nd	3.2.86	4-5								
4	1st	Citric Plant (Will Call)	4-55								
4	2nd	Citric Lab (Will Call)	1-5								
44	1st	Ext. Prod. Proc.	4-5								
44	1st	Ext. QA Lab 1-2	2-5								
120	1st	WWTP Lab (Will Call)	1-5								
NOTE: Identify additional pick-ups here and explain non-solvent pick-ups and other dispositions.											

1. Do not pick up containers if they are not correctly labeled and have a neutralized pH. Notify area supervisor or site environmental engineer.

2. If any containers are observed to be leaking, contain the leakage and contact the area supervisor or site environmental engineer.

-SEE REVERSE SIDE FOR INSTRUCTIONS-

WASTE SOLVENT PICK-UP CHECKLIST
BUILDINGS: 9 - 10

Date: _____

Figure 3-2 (con't.)

BLDG.	FLOOR	LOCATION	NORMAL QUANTITY (NO. OF CONT./ GALLONS)	CHECKED		NO. OF CONTAINERS PICKED UP			DISPOSITION		
				AREA	pH	CHLOR	NON-CHLOR	OTHER	DRUM NO CHLOR/N-CHLOR	LAB CHEM AREA	OTHER
9	Bsmt	Paint Shop (Will Call) 1-2	1-5								
9	2nd	9.W1 Bay 1 Outside Wall	3-5								
9	2nd	9.W1 Bay 3 Outside Wall	8-5								
10	1st	Scale Up Plant	55								
NOTE: Identify additional pick-ups here and explain non-solvent pick-ups and other dispositions.											

1. Do not pick up containers if they are not correctly labeled and have a neutralized pH. Notify area supervisor or site environmental engineer.

2. If any containers are observed to be leaking, contain the leakage and contact the area supervisor or site environmental engineer.

-SEE REVERSE SIDE FOR INSTRUCTIONS-

WASTE SOLVENT PICK-UP CHECKLIST
BUILDING: 18

Date: _____

Figure 3-2 (con't.)

BLDG.	FLOOR	LOCATION	NORMAL QUANTITY (NO. OF CONT./ GALLONS)	CHECKED		NO. OF CONTAINERS PICKED UP			DISPOSITION		
				AREA	pH	CHLOR	NON-CHLOR	OTHER	DRUM NO CHLOR/N-CHLOR	LAB CHEM AREA	OTHER
18	1st	18.1.7 1-2	2-5								
18	1st	18.1.23	3-5								
18	1st	18.1.26	2-5								
18	2nd	18.2.37	2-5								
18A	1st	Camera Room 1-2	1-5								
18B	Bsmt	18B.B.B15	2-2								
18B	2nd	18B.2.B205	2-5								
18C	Bsmt	18C.B.C09	1-2								
18C	1st	18C.1.C107 1-2	1-5								
18C	2nd	18C.2.C208	2-5								
NOTE: Identify additional pick-ups here and explain non-solvent pick-ups and other dispositions.											

1. Do not pick up containers if they are not correctly labeled and have a neutralized pH. Notify area supervisor or site environmental engineer.

2. If any containers are observed to be leaking, contain the leakage and contact the area supervisor or site environmental engineer.

-SEE REVERSE SIDE FOR INSTRUCTIONS-

NON-CHLORINATED WASTE SOLVENT

COMPONENTS AND CHARACTERISTICS
Figure 3-3

Components	Range (Percent Volume)
Water	10-75
Acetone	0-10
Butyl Acetate	0-5
Chloroform	0-10
Cyclohexanone	0-15
Ethanol	0-10
Ethyl Acetate	0-15
Ethyl Benzene	0-5
Ethyl Cellulose	0-5
Ethyl Ether	0-5
Isopropyl Alcohol	0-5
Methanol	0-15
Methylene Chloride	0-5
1-Propanol	0-5
Pyridine	0-10
Toluene	0-25
Xylene	0-5

Components	Range (mg/L)
Arsenic	0-2
Barium	0-40
Cadmium	0-1
Chromium	0-2
Copper	0-25
Lead	0-10
Mercury	0-5
Nickel	0-10
Selenium	0-1
Silver	0-4
Thallium	0-2
Zinc	0-10

Components	Range	
pH	5-9	
Specific Gravity	0.8 - 1.1	g/mL
Cyanide	0-2	mg/kg
Sulfide	0-10	mg/kg
Ash content	0-1	%
Flashpoint	50 -100	°F
TOX	0-15	%Cl
BTU	2,500 - 7,500	per lb

Summarized physical and chemical characteristics of the waste are given in Figure 3-3.

The wastes that are termed non-halogenated are classified as listed hazardous wastes with waste codes of F003 and F005. They are listed on the basis of their ignitability and toxicity. Bayer has determined these wastes to be hazardous due to the presence or potential presence of the following materials:

a. Laboratory and Extraction solvents containing xylene, acetone, ethyl benzene, methyl isobutyl ketone, cyclohexanone, and methanol, and

b. laboratory and extraction solvents containing toluene.

In most instances, there is also an alcohol, such as methanol or ethanol in the waste adding to the flammability of the mixture. In these cases the waste is also classified as DOT flammable and EPA ignitable (D001) due to a flash point of less than 100°F.

Other characteristic waste codes applicable to this waste include the following:

Arsenic	D004
Lead	D008
Mercury	D009
Benzene	D018
Carbon Tetrachloride	D019
Chloroform	D022
Methyl Ethyl Ketone	D035
Pyridine	D038

Bayer has determined that these materials are hazardous wastes due to our familiarity with the processes generating the waste, the materials used, and the laboratory analyses for the wastes. Laboratory reports for representative samples of the non-chlorinated waste are given in Appendix D.

The locations where the wastes are picked up are also shown in Figure 3-2.

Miscellaneous Laboratory Chemicals:

Through the day-to-day operations of the research and development laboratories, a variety of spent miscellaneous lab chemicals are generated. The materials can be in solid, liquid, or gas form and can have a variety of characteristics.

Many of the wastes are listed as toxic or acutely toxic, others are listed only on the basis of their characteristics.

Figure 3-4 is a compilation of the materials that could be seen in the storage facility at Building 35. Included in the figure is the listing of the P and U waste codes for the materials and some characteristic waste codes.

These wastes are accumulated at the point of generation and, at Building 35, are segregated on the basis of their compatibility. Information as to their characteristics and properties are obtained from the following publications:

Chemical Dictionary
Merck Index
SAX Handbook of Hazardous Industrial Chemicals

This information is used with the compatibility chart shown in Appendix E to determine proper segregation.

3.1b Containerized Waste

The solvent waste produced at Bayer is collected in 2 and/or 5-gallon containers and transferred to 55-gallon drums at Building 35. Details regarding container construction materials and compatibility are given in section 4.1. Virtually all of the wastes, except for a few of the dry laboratory chemicals, contain free liquids. The drums, stored in Building 35, are in a diked, enclosed area that provides secondary containment. No wastes are stored without secondary containment; therefore, no testing for free liquids will be performed.

Section 4 provides information on the storage facility and shows the containment system for the building.

Figure 3-4

LIST OF WASTE CHEMICALS

CHEMICAL	EPA ID#
Acetaldehyde	U001
Acetone	U002
Acetonitrile	U003
Acetophenone	U004
Acetyl chloride	U006
Acrolein	P003
Acrylamide	U007
Acrylic Acid	U008
Acrylonitrile	U009
Allyl alcohol	P005
Allyl bromide	D001
Allyl chloride	D001
Aluminum chloride	D002
Aminopyridine	P008
Ammonium hydroxide	D002
Ammonium picrate	P009
Ammonium persulfate	D001
Ammonium thiocyanate	P030
Amyl acetate	D001
Amyl alcohol	D001
Aniline	U012
Arsenic acid	P010
Arsenic oxide	P012
Arsenic pentoxide	P011
Aziridine	P054
Barium acetate	D005
Barium chloride	D005
Barium hydroxide	D005
Barium oxide	D005
Benzene	U019
Benzene, 1,2-dichloro	U070
Benzene, 1,3-dichloro	U071
Benzene, 1,4-dichloro	U072
Benzenesulfonic acid	D002
Benzidine	U021
p-Benzoquinone	U197
Benzyl chloride	P028
Boric acid	D002
Boron trichloride	D002
Bromoacetaldehyde	D001
Brucine	P018
Butanedione monoxime	D001
Butyl alcohol	U031
Butyl methacrylate	D001
Cacodylic acid	U136
Cadmium chloride	D006
Calcium chromate	U032
Calcium nitrate	D001

Figure 3-4 (con't.)

LIST OF WASTE CHEMICALS

CHEMICAL	EPA ID#
Carbon disulfide	P022
Carbon tetrachloride	U211
Carbonyl iron powder	D001
Ceric Sulfate	D001
Chloroacetyl chloride	D002
p-Chloroaniline	P024
Chlorobenzene	U037
Chlorobenzoyl chloride	D002
Chloroform	U044
Chlorophenol	U048
Chloropropionaldehyde diethyl acetal	D001
Chlorosuccinimide	D002
Chromic acid, and salts	D002, D007
Chromic sulfate	D007
Chrysene	U050
Copper Cyanide	P029
Cresol	U052
Crotonyl chloride	D001
Cumene	U055
Cyanogen bromide	U246
Cyanuric chloride	P030
Cyclohexane	U056
Cyclohexanone	U057
Dibutyl phthalate	U069
Dichloroacetic acid	D002
Dichlorobenzoyl chloride	D002
2,4-Dichlorophenol	U081
2,6-Dichlorophenol	U082
1,3-Dichloropropene	U084
Diethylamine	D001
Diethyl phthalate	U088
Difluorophosphoric acid	D002
Dihydropyran	D001
Diisobutyl aluminum hydride	D001
Dimethoxpropane	D001
Dimethylamine	U092
Dimethylcarbamyl chloride	U097
Dimethyldichlorosilane	D001
Dimethylformamide	D001
alpha, alpha-Dimethyl phenethylamine	P046
Dimethyl phthalate	U102
2,4-Dinitrophenol	P048
2,4 Dinitrotoluene	U105
2,6-Dinitrotoluene	U106
Dioctyl phthalate	U107
1,4-Dioxane	U108
Epichlorohydrin	U041
Ethane, 1,1-dichloro	U076

Figure 3-4 (con't.)

LIST OF WASTE CHEMICALS

CHEMICAL	EPA ID#
Ethane, 1,2-dichloro	U077
Ethane, 1,1,1-trichloro	U226
Ethanal	U001
Ethanolamine	D002
Ethyl acetate	U112
Ethyl alcohol	D001
Ethyl bromoacetate	D002
Ethyl chloride	D001
Ethyl chloroformate	D001
Ethylene dibromide	U067
Ethylene dichloride	U077
Ethylene glycol monobutyl ether	D001
Ethylene glycol monomethyl ether	D001
Ethylenimine	P054
Ethyl carbamate	U238
Ethyl ether	U117
Ethyl formate	D001
Ethyl methane sulfonate	U119
Ferric chloride	D002
Fluoboric acid	D002
Formaldehyde	U122
Formic acid	U123
Furan	U124
Furfural	U125
Gloxylic acid	D002
Heptaldehyde	D001
Hexane	D001
Hexanoic acid	D002
Hydrazine	U133
Hydrochloric acid	D002
Hydrogen fluoride	U134
Hydrogen sulfide	U135
Hydroxylamine hydrochloride	D002
Isobutyl chloroformate	D001,D002
Lead acetate	U144
Lead dioxide	D001
Lithium aluminum hydride	D001,D003
Lithium perchlorate	D001
Magnesium nitrate	D001
Manganese dioxide	D001
Maleic anhydride	U147
Malononitrile	U149
Mercuric oxide	D009
Mercuric sulfide	D009
Mercury	U151
Methacrylic acid	D002
Methanesulfonyl chloride	D002
Methanol	U154

Figure 3-4 (con't.)

LIST OF WASTE CHEMICALS

CHEMICAL	EPA ID#
Methylal	D001
Methylene chloride	U080
Methyl ethyl ketone	U159
Methyl hydrazine	P068
Methyl iodide	U138
Methyl isobutyl ketone	U161
Methyl methacrylate	D001, D003
Methylstyrene	D001
Methyl vinyl ketone	D001
Naphthalene	U165
1-Naphthalenamine	U167
1,4-Naphthoquinone	U166
Nicotine	P075
Nitric acid	D002
Nitroaniline	P077
Nitrobenzene	U169
Nitromethane	D001
p-Nitrophenol	U170
Oleum	D002
Osmium tetroxide	P087
Oxirane	U115
Paraldehyde	U182
Pentyne	D001
Perchloric Acid	D001
Periodic Acid	D001
Phenacetin	U187
Phenol	U188
Phosgene	P095
Phosphoric acid	D002
Phosphorus oxychloride	D002
Phosphorus pentoxide	D001,D002,D003
Phosphorus trichloride	D002,D003
Phosphotungstic acid	D001,D002
Phthalic anhydride	U190
Potassium tert-butylate	D001,D003
Potassium cyanide	P098
Potassium dichromate	D001
Potassium dichromate, sulfuric acid, mercuric sulfate, silver sulfate	D002,D009, D011
Potassium fluoride	D002
Potassium hydroxide	D002
Potassium metal	D001,D003
Potassium nitrate	D001
Potassium nitrite	D001
Potassium permanganate	D001
Potassium thiocyanate	P030
Propane, 1,2-dichloro	U083
Propylene glycol	D001

Figure 3-4 (con't.)

LIST OF WASTE CHEMICALS

CHEMICAL	EPA ID#
Pyridine	U196
Resorcinol	U201
Saccharin	U202
Silver nitrate	D001
Sodium amalgam	D001,D003,D009
Sodium arsenite	D004
Sodium azide	P105
Sodium bisulfate	D002
Sodium borohydride	D001,D003
Sodium chlorate	D001
Sodium cyanide	P106
Sodium cyanoamide	P030
Sodium hydroxide	D002
Sodium metal	D001,D003
Sodium methylate	D001
Sodium nitrate	D001
Sodium nitrite	D001
Sodium perborate	D001
Sodium perchlorate	D001
Sodium periodate	D001
Sodium trichlorophenate	D002
Strontium peroxide	D001
Sulfanilic acid	D002
Sulfuric acid	D002
1,1,1,2-Tetrachloroethane	U208
1,1,2,2-Tetrachloroethane	U209
Tetrahydrofuran	U213
Tetramethylsilane	D001
Thiourea	U219
Titanium tetrachloride	D002
Titanium trichloride	D001
Toluene	U220
Toluenediamine	U221
Toluenesulfonic acid	D002
Trichloroacetic acid	D002
Trichloroethylene	U228
Triethylamine	D001
Vinyl chloride	U043
Xylene	U239
Zinc chloride	D002
Zinc nitrate	D001

SECTION 3-16
ISSUED 10/28/96

WASTE ANALYSIS PLAN

BAYER CORPORATION

ELKHART, INDIANA

EPA I.D. No. - IND005068705

3.2 Waste Analysis Plan

This waste analysis plan describes the sampling and analytical methods which are followed by Bayer Corporation to ensure that the wastes that are generated are stored, handled and disposed in an environmentally sound fashion. Bayer approaches the testing of its' waste with three main goals:

1. Perform periodic sampling and analysis to verify that no significant change has occurred in the waste both in those generated on-site and those generated off site.

2. Establish the hazards and identify constituents in unknowns generated by new processes or other unknowns.

3. Provide sufficient sampling and analysis to satisfy the waste analysis requirements of 40 CFR Parts 264 and 268 and 329 IAC 3.1-9 and 3.1-12.

All analytical work to fulfill these goals is handled by outside contract laboratories. Sampling of the waste may be done by on-site personnel or by contract personnel with samples being shipped to an appropriate laboratory. Currently, Bayer is using EIS Environmental Engineers in South Bend, IN for periodic analysis of the wastes.

3.2a Necessity for Waste Analysis

There are six general reasons behind the sampling and analysis program at Bayer. They are:

1. Identify material compatibility,
2. verify segregation and acceptability for disposal,
3. periodic verification of the waste characteristics,
4. verify constituents and characteristics of off-plant materials,
5. identify unknowns, and
6. determine if the material is a waste restricted from land disposal and whether it meets the prescribed treatment standard.

As was discussed previously, Bayer generates three broad categories of wastes. These are termed chlorinated solvents, non-chlorinated solvents, and miscellaneous laboratory chemicals.

The chlorinated and non-chlorinated solvents are bulk packaged, separately, in 55-gallon drums, with the drums stored in Building 35 pending disposal. In order to combine these wastes, we must first ensure that they are compatible. Compatibility determinations are made by both physical testing and the identification of constituents for use in the compatibility charts shown in Appendix E. The site environmental engineer uses the information generated by these waste analyses with the charts in Appendix E to determine proper compatibility categories.

The two solvent streams are regulated as listed wastes from non-specific sources and have severe restrictions on land disposal. For many years, it has been Bayer's policy to incinerate the solvents which are generated that cannot be adequately recovered. Analyses of the wastes are needed to determine levels of halogens in the material in order to dispose of the wastes properly. In addition, there are significant restrictions, and corresponding monetary incentives, to segregate wastes into strongly halogenated and nonhalogenated (or weakly halogenated) materials. Testing is needed to continue to verify this segregation and to provide proof of the separation to the corresponding permitted disposal facilities. It is also needed to confirm the characteristics of the separated materials.

The operations at the Bayer Miles Avenue complex include a significant amount of research and development work in medical diagnostic, consumer product, and food-related applications. This ongoing research results in the production of a variety of wastes that can change over time. Though the specific chemicals used can change, the general types of chemicals used in these R&D areas are relatively constant.

In order to continue to dispose of the materials in a proper and responsible fashion and to ensure safe handling, periodic analyses of the waste are required. These analyses should determine if the waste has significantly altered in its' composition or characteristics.

As the largest facility of Bayer in Northern Indiana, the Miles Avenue complex accepts waste from the other Bayer plants in the area.

These wastes are classified on the basis of the processes generating the waste, and normally fit in the categories of chlorinated or non-chlorinated solvents. Analyses of these wastes are needed to periodically confirm that the wastes fall within their broad guidelines for constituents.

Another reason behind the Bayer sampling program is the identification of unknowns. Occasionally, there are small jars of laboratory chemicals that require identification. In order to properly labpack the materials for disposal, these unknowns need to be identified. Unknowns may also be generated by new R&D processes. Again, in order to dispose of the materials, the unknown, or its' characteristics, need to be identified.

The final reason behind the Bayer sampling program is the determination of the applicability of land disposal restrictions on the waste and determination of underlying hazardous constituents (UHCs). Even though virtually all of the wastes are sent for incineration, Bayer is obligated to determine if the waste is restricted, and if so, what treatment standard it needs to meet. If it already meets the required standard, then that must be documented as well.

3.2b General Procedure

Attached in Figure 3-5 is a flowchart indicating the testing decision for the wastes handled at Building 35. Normal incoming wastes are checked to ensure that their pH has been adjusted to levels sufficient for bulk packaging. If the pH is within 5 to 9, then the waste is stored without further tests. If the material is not a standard waste but the constituents are known, then the material will be tested for its' characteristics. These tests will include pH, flash point, cyanide, sulfide, and total organic halogens.

Miscellaneous lab chemicals are inspected to see that the labels are sufficient for classification on the basis of compatibility. The ingredients are compared with the compatibility listing in Appendix E. It is then segregated and stored with like or compatible materials. Should the materials be unknown, either lab chemicals or bulk materials, then constituent and characteristic analyses are conducted. The constituent tests consist of: volatile organics, semi-volatile organics (both extracted by TCLP if required), total metals and TCLP extraction for metals.

WASTES FROM MILES AVENUE COMPLEX

Figure 3-5

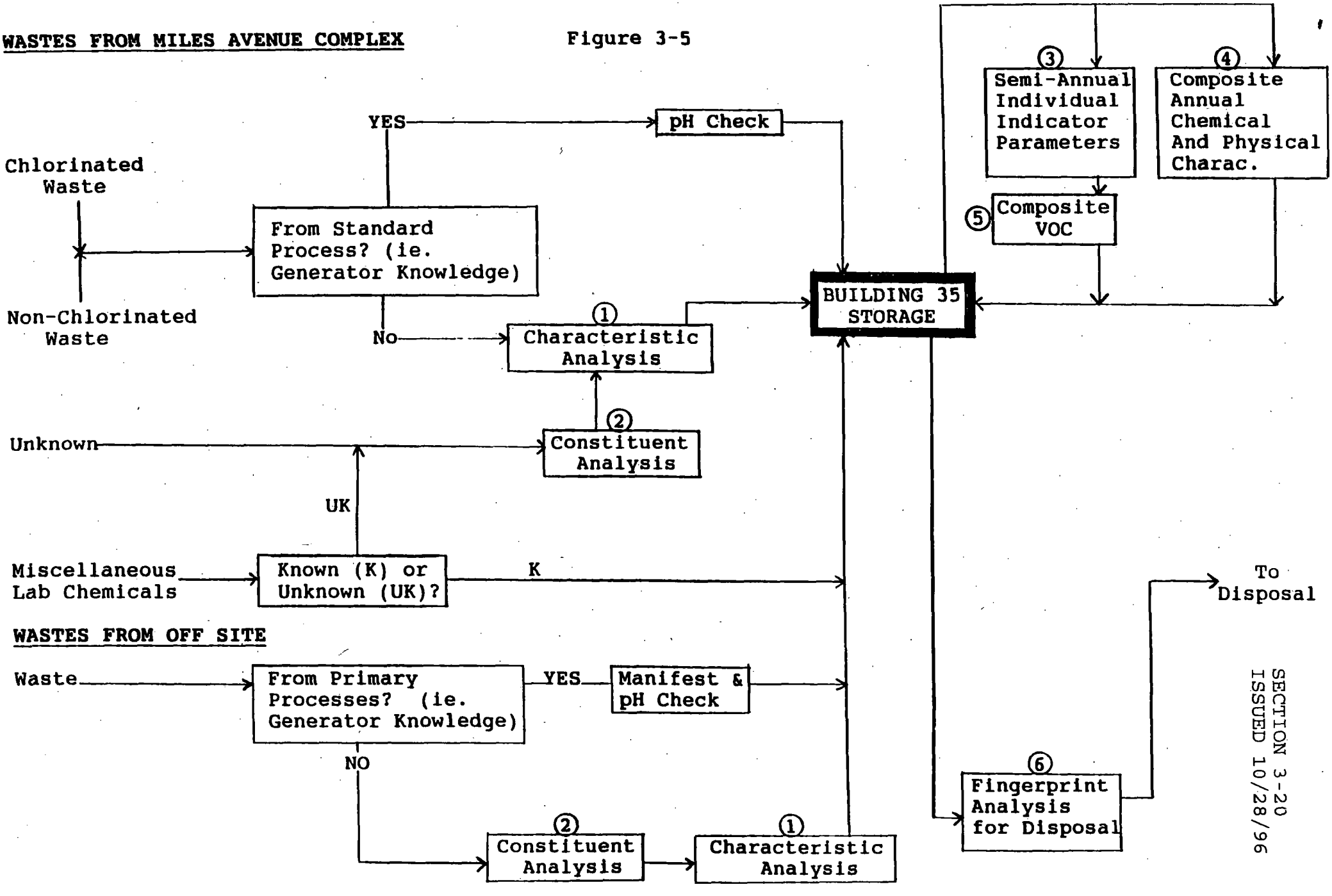


Figure 3-5 (continued)

Test Set	Tests*
1	pH, Flash Point, Cyanide, Sulfide, TOX (Individual Samples)
2	VOCs, Semi-VOCs, TCLP for Metals and Volatiles (Individual Samples)
3	pH, Flash Point, TOX, Cyanide, Sulfide (Individual Samples of 10% of Chlorinated and 10% of Non-chlorinated Drums in Storage)
4	pH, Flash Point, TOX, TOC, Cyanide, Sulfide, BTU Content, VOCs, Semi-VOCs, Heavy Metals, Ash Content, PCB's and Pesticides, TCLP for volatiles and metals (Composite of 10% of Chlorinated and 10% of Non-chlorinated Drums in Storage)
5	TCLP for Volatiles and Metals (Composite Sample of 10% of Drums in Storage that were used in Test Set 3)
6	Tests conducted by disposal facility to check "fingerprint" of the waste. Normally: Specific Gravity, pH, Viscosity, Flash Point, Ash Content, BTU Content, Water %, TCLP Metals, Chlorides, Fluoride, PCBs

* Cyanide and sulfide are not analyzed on halogenated organic wastes.

Characteristic tests are pH, flash point, cyanide, sulfide, and total organic halogens. The constituent and characteristic analyses would then be used for compatibility determinations.

Materials from off site are inspected to ensure that they are generated from the standard Bayer processes and are not new wastes. Prior to initiating a shipment from one of the outlying facilities to Building 35, the site environmental engineer at Miles Avenue is contacted by the off site environmental coordinator. The Miles Avenue site engineer establishes the identity of the waste by discussion with off site personnel and directs them on the testing requirements prior to acceptance at Building 35. If the materials are from our normal primary processes, then the wastes are not tested prior to storage. If the wastes are from new processes, then they are subjected to constituent and characteristic analyses as indicated above.

These procedures for the incoming wastes, from both on-site and off site generators, are intended to identify unknowns, and verify the characteristics and constituents of off site wastes. To satisfy the other requirements for disposal (segregation and acceptability for disposal, verification of characteristics and compliance with the land disposal restrictions), Bayer conducts a combination of semi-annual sampling for individual indicator parameters and VOCs with annual sampling for complete waste characterizations. These are also supplemented with fingerprint analyses conducted by disposal firms on the wastes as it is approved for shipping.

Semi-annual representative random samples of 10% of the chlorinated drums and 10% of the nonchlorinated drums in Building 35 are taken and tested for individual indicator parameters. These parameters are pH, flash point, total organic halogens, cyanide, and sulfide. Samples from the same random drums are composited for a VOC and TCLP metals scan. Optionally, TCLP tests for volatiles and metals are performed on the composite and on half of the random samples (i.e., 5% of chlorinated and 5% of the non-chlorinated drums). These samples are taken to provide semi-annual verification that there are no significant differences in the waste and that there are no potentially incompatible materials in the waste.

Annually, a complete chemical and physical characterization is conducted on both the chlorinated solvent waste and the non-chlorinated solvent waste. At random, 10% of the drums of each type are sampled and composited. This composite sample is tested for pH, flash point, total organic halogens, total organic carbon, cyanide, sulfide, BTU content, volatile organic constituents, semi-volatile organic constituents, pesticides and PCBs, total metals, and ash content. A TCLP for volatile organics and metals is also conducted. This analysis is to confirm the overall acceptability of the semi-annual indicator monitoring and to provide a complete picture of the waste, at least annually.

The semi-annual and annual sampling are conducted on a rotating six-month basis. That is, when the full scale annual sampling is conducted, no semi-annual samples are collected.

Prior to shipment for disposal, wastes are inspected and reviewed for compliance with the land disposal restrictions. If insufficient information is available to classify the material under the land ban rules either through knowledge of the waste or from prior lab sampling, then it will be treated as an unknown and analyzed accordingly.

As a supplement to Bayer semi-annual and annual waste analyses, and as a check on the type of wastes disposed at their facilities, the disposal companies that are used subject Bayer's waste to fingerprint analyses. The analyses typically consist of the following parameters: pH, flash point, specific gravity, viscosity, ash content, BTU content, % water, TCLP metals, chlorides, fluorides and PCBs.

3.2c Parameters and Rationale

The parameters for the characteristic and constituent analyses for both periodic waste analyses and "as needed" tests are as follows:

Parameter	Rationale
pH	Strongly acidic or basic materials could be incompatible with high solvent concentration waste and could be corrosive to the storage drums.
Flash Point	Materials could have alcohols or other flammable materials. Flammability classification needed for storage, transport, and disposal.
Cyanide	Normal parameter for testing of reactivity.
Sulfide	Normal parameter for testing of reactivity.
Total Organic Halogens (TOX)	Used as a screening test to indicate high concentrations of chlorinated solvents. Shorter turn-around and cheaper than a full VOC scan.
BTU Content	Needed in order to establish the applicability of incineration for the waste. It gives the relative heating value of the waste.
Ash Content	Also needed to determine the residue remaining after the materials are destroyed. Applicable for incineration of the waste.
TCLP Metals	Analyzed to determine if any of the wastes have characteristic metal contamination.

Parameter	Rationale
Volatile Organic Compounds (VOC)	GC/MS analysis to detect volatile fractions in the waste. Materials that are in the waste such as acetone, methylene chloride, toluene, and xylene are identified and quantified.
Semi Volatile Organic Compounds (Acid Extractable and Base Neutral)	GC/MS analysis to detect and quantify any semi volatile constituents in the waste.
Pesticides and PCBs	Periodic test to verify that no pesticides and/or PCBs are in the waste.
TCLP Organics	Conducted to determine if the waste has characteristic organic constituents. Note that a TCLP organic extraction analysis will be used instead of a straight VOC/SVOC scan when appropriate.

3.2d Test Methods

The test methods to be employed in the applicable analyses are listed in Figure 3-6.

To ensure that the laboratory analyses provided by the contract laboratory for Bayer are adequate, Bayer will require the laboratory to follow at least the minimum quality control procedures listed below.

1. Use of acceptable sample preparation as per the analytical methods specified in Figure 3-6.

2. Calibration of laboratory instruments to within acceptable limits according to EPA or manufacturer's specifications before, after, and during use. Reference standards will be used when necessary.

3. Periodic inspection, maintenance and necessary service of all laboratory instruments and equipment before each use in accordance with the recommended maintenance schedule in for the equipment.

4. The use of reference standards and QC samples as necessary to determine the accuracy and precision of procedures, instruments and operators consisting of a minimum of sample blanks, and matrix spikes (where applicable) prior to any sample analysis, and duplicate determinations at least every tenth sample.

5. The use of adequate statistical procedures to monitor the precision and accuracy of the data and to establish acceptable limits including calculation of method detection limits, accuracy of controls, recovery and precision of the method.

6. A continuous review of results to identify and correct problems within the measurement system.

7. Documenting the performance of systems and operators.

8. Regular participation in external laboratory evaluations to determine the accuracy and overall performance of the laboratory. This should include performance evaluation and interlaboratory comparison studies, and formal field unit/laboratory evaluations and inspections.

9. Use of sample identification and, as necessary, formal chain-of-custody procedures in the laboratory.

10. Maintenance and storage of complete records, charts, and logs of all pertinent laboratory calibration, analytical and QC activities and data.

11. Ensuring all data outputs are presented in their prescribed format consisting of not less than laboratory name and EPA ID number, date samples were received, date of analysis, the analyte tested, method name, sample description, test result, units of result, detection limit and precision of the method.

Figure 3-6

Parameters and Test Methods for Hazardous Characteristics and Constituents

Parameter or Characteristic	Test Method (SW-846)	Notes
Ignitability		
Flash Point	1010 or 1020	Closed cup or Open
Corrosivity		
pH	9040	Electrometric
Reactivity		
Cyanide	9010 or 9012	Colorimetric, Manual or Auto.
Sulfide	9030	
TCLP Metals		
Arsenic	1311 and 6010	Extraction/AA Analysis
Barium	1311 and 6010	"
Cadmium	1311 and 6010	"
Chromium	1311 and 6010	"
Lead	1311 and 6010	"
Mercury	1311 and 7470	"
Selenium	1311 and 6010	"
Silver	1311 and 6010	"
Total Organic Halogens	9020	
Total Organic Carbon	9060	
Volatile Organics	8260	GC/MS
Semivolatile Organics	8270	GC/MS
Pesticides and PCB's	8080	Gas Chrom.
TCLP (Toxicity Characteristic Leaching Procedure)	1311	

Note: Flame and graphite furnace atomic absorption spectroscopy (SW 846 series 7000 methods) may be substituted for inductively coupled plasma atomic emission spectroscopy metals analysis.

SW-846 Test Methods for Evaluating Solid Waste, Third Ed., November, 1986 as amended by updates I (July, 1992), II (September, 1994), IIA (August, 1993), and IIB (January, 1995)

QUALITY ASSURANCE PROJECT PLAN FOR THE RCRA WASTE ANALYSIS PLAN AT BAYER CORPORATION, MILES AVENUE SITE U.S. EPA ID NUMBER (IND 005 068 705) REVISION 1 OCTOBER 28, 1996

Prepared by: Environmental Department
Bayer Corporation
Miles Avenue Site

TABLE OF CONTENTS

1.0 INTRODUCTION

The success in meeting the stated objectives of the Waste Analysis Plan (WAP) will be greatly dependent on the quality of data generated through sampling and analytical activities. To ensure the highest quality data possible, a project specific Quality Assurance Project Plan (QAPP) will be implemented. This plan will include operational guidelines for the following two major areas:

* Field Sampling Activities

* Laboratory Analysis Activities

The primary objective of this QAPP is to guarantee that all data generated by the WAP are of sufficient quality to allow a well informed evaluation of the waste characteristics and provide a basis for waste management decisions.

Data quality is limited by the following parameters which this plan will address:

* Completeness - the adequacy in quantity of valid measurements both to ensure accurate interpretation and to answer all important questions.

* Representativeness - the extent to which discrete measurements accurately describe the population which they are intended to represent. Good representativeness is achieved through careful, informed selection of samples, and analytical parameters.

* Accuracy and Precision - the agreement between a measurement and the true value and the degree of variability of the measurement. Accuracy and precision of data collected in accordance with the WAP will depend upon the measurement standards used and the meticulous, competent use of them by qualified personnel.

1.1 Project QA/QC Personnel Responsibilities

Quality Assurance Officer: This individual is in charge of all contract laboratory QA/QC activities and is responsible for reviewing all field and laboratory information generated and accepting or rejecting the generated data. The Quality Assurance Officer will generally be an employee of the contract laboratory used for analysis.

Usually, samples will be collected by contract laboratory personnel, however, in some cases samples may be collected by Bayer personnel. In either case, all collection information will be supplied to the Quality Assurance Officer for review along with the samples.

Project Manager: The project manager's responsibilities include preparation of the QAPP, review of all project data, scheduling of sampling activities, correspondence, and archiving of all generated data.

Laboratory Manager: The laboratory manager's responsibilities include overall management of laboratory activities, adherence to laboratory QA/QC procedures, scheduling of laboratory resources, and reporting directly to the Quality Assurance Officer.

Sampling Geologists/Engineers: The geologists/engineers responsibilities include sample collection in accordance with the procedures outlined in the WAP.

Sample Custodian: The sample custodian is responsible for inspection and log-in of incoming samples, acceptance of samples via Chain-of-Custody and control of sample storage.

1.2 QAPP Distribution

The QAPP will be distributed by the Project Manager to both the Quality Assurance Officer and Laboratory Manager.

Further distribution of the QAPP by each manager to project personnel performing key tasks in that manager's sphere of responsibility is also performed.

1.3 Training

All project personnel will be properly trained, qualified individuals. Prior to commencement of sampling or analysis, personnel will be given instruction specific to the project. Areas covered by this training are further delineated in the Field Sampling and Laboratory Analysis sections of the QAPP.

1.4 Document Control

Both field sampling and laboratory analysis phases of any project result in accumulation of documents such as field sampling forms, laboratory bench sheets, Chain-of-Custody forms, and analytical reports.

Document control is a formal system of activities that ensure that:

* All participants in the project are informed of all specific documents which need to be maintained.

* All participants in the project are promptly informed of any revisions to the WAP, including the QAPP.

* All critical documents generated during the project are accounted for during and at the end of the project.

2.0 FIELD SAMPLING ACTIVITIES

This section describes specific quality control activities to be followed in order to minimize and/or to detect circumstances which may adversely affect data quality for the WAP.

2.1 Training

All sampling personnel will be properly trained prior to collection of samples. Specific instruction will be given in the following areas:

* Line of authority and communication

* Overview of the WAP and QAPP

* Documentation requirements

* Personal protection

* Procedures to avoid sample contamination

2.2 Documentation requirements

Field sampling personnel will be required to initiate, continue, and maintain the following documentation during the course of sampling. (Copies of these documents are included in the WAP. As an alternative to the example shown, vendor supplied documents meeting the same criteria may be used.)

Document Type

Chain-of-Custody
Sample Container Labels

The documents created during sampling will be reviewed by the Project Manager and Quality Assurance Officer for correctness and completeness. The original Chain-of-Custody, along with the laboratory report of findings, will be submitted to Bayer for its archiving. Chemical analysis data should be archived by the contract laboratory for a period of three (3) years.

2.3 Chain-of-Custody Procedures

Due to the evidentiary nature of samples collected, possession must be traceable from the time the samples are collected until final storage after completion of analysis.

To maintain and document sample possession, Chain-of-Custody procedures are followed. A sample is under custody of an individual if:

* It is in that individual's possession, or
* It is within view of the individual, after being in his/her possession, or
* It was in the individual's possession and then locked up by the individual to prevent tampering, or
* It is in a designated secure area.

Field Custody Procedures

* The field sampler is personally responsible for the care and custody of the samples collected until they are transferred or dispatched properly.
* The Project Manager, or his/her designee determines whether proper custody procedures were followed during the field sampling and decides if additional samples are required.
* Prior to commencement of sampling, the Project Manager will instruct the samplers in the Chain-of-Custody procedures.

Transfer of Custody and Shipment

* Samples are accompanied by a Chain-of-Custody record from the time they are collected. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents sample custody transfer from the sampler to the sample custodian at the laboratory.

* Minimum information recorded on the Chain-of-Custody record in addition to that listed above will include:
  * Sampling site identification
  * Sampling date and time
  * Identification of sampler
  * Sample Identification
  * Sample description (type and quantity)
  * Analyses required
* Samples will be stored at the sampling site in coolers containing ice. The coolers will be transported by vehicle to the laboratory for analysis.
* The sample custodian will accept custody of the samples via the Chain-of-Custody record. At this time, the physical condition of the transported samples will be examined and recorded.

2.4 Sampling/Sample Preservation/Storage

Samples will be collected at the intervals and by the methods specified in the WAP. Required containers, holding times, and preservation techniques are also specified in the WAP.

3.0 LABORATORY ACTIVITIES

This section describes specific QA/QC procedures to be followed by contract laboratories when analyzing waste samples for Bayer Corporation in accordance with the WAP.

3.1 Receipt and Log-in of Samples

The collected samples will be released to the laboratory by the field sampling personnel via a Chain-of-Custody form. The laboratory sample custodian will, at this time perform the following:

* Verify completeness of sample labels and Chain-of-Custody forms.
* Verify sample integrity.
* Determine whether samples were properly refrigerated during transportation.

* Assign a unique laboratory sample identification number.

* Sign and date the Chain-of-Custody form.

* Place samples in a walk-in cooler or other refrigeration device for storage until analysis.

3.2 Sample Storage

Samples will be stored at 4°C until they are analyzed. Sample analysis will be completed within the holding times indicated in the WAP.

3.3 Calibration Procedures

Analyses specified by the WAP will require that the following analytical equipment be calibrated as shown below.

* VOC - Gas Chromatograph/Mass Spectrometer

* SVOC - Gas Chromatograph/Mass Spectrometer

* Metals - Atomic Absorption and/or ICP

* Flash Point - Flash Point Tester

* pH - pH Meter

* TOC - Organic Carbon Analyzer

* TOH - Organic Halogen Analyzer

The following schedule will be employed:

Parameter	Calibration Schedule
VOC/SVOC	* Initial 5 point calibration. * Daily BFB/DFTPP tuning compound analysis. * Daily check standard analysis including CCC/SPCC compounds.
Metals	* Initial single point and blank with every lot of furnace/flame analysis. ICP calibrated per manufacturer's instructions using combined elements. * Continuing calibration every 10th sample.

Calibration Schedule (continued)

Parameter	Calibration Schedule
Metals (cont.)	* EPA EMSL QC sample with every lot of analysis for AA work. * Interference check standard for ICP.
Flash point	* Single point using reference standard of known FP. Perform in duplicate.
Corrosivity (pH)	* Initial two point calibration followed by a control check before and after each sample.
TOC	* Initial single point calibration followed by a control check every 10th sample.
TOX	* Initial single point calibration followed by a control check every 10th sample.

3.4 Quality Control Steps During Analysis

The following generalized QC steps are employed by the laboratory staff to judge sample analysis at the time that analysis is occurring. Should problems be evident, analysis is stopped until the problem can be resolved.

Generalized QC Step	Frequency
* Method Blank Analysis	Daily or more often
* Calibration Check Standard Analysis	Daily or more often
* Duplicate sample Analysis	1/10 or as required
* Duplicate Matrix Spike Analysis	1/10 or as required
* Field Blank/Trip Blank Analysis	As required
* Method of Standard Addition Analysis	As required
* Single Matrix Spike Analysis	1/10 or as required

Generalized QC Step	Frequency
* Interference Check Standard Analysis (ICP)	Twice Daily
* Tuning Compound Analysis (GC/MS Only)	Daily (12 hours)
* Surrogate Compound Analysis (GC and GC/MS)	Each Sample
* Laboratory Controls	Daily or as required

Not all QC steps above are applicable to all analysis which can be conducted in a laboratory nor are the frequencies of these steps the same for all analysis.

Table 1 presents the WAP specific QC steps to be employed. Table 2 lists QA limits and interpretations. Table 3 presents Internal Standards and Surrogate Compounds used in GC/MS analysis.

TABLE 1

WAP SPECIFIC QC STEPS

QC Requirement	Frequency		
	Metals	VOC/SVOC	Cyanide
Calibration Blanks	1/day	1/day	NA
Method Blanks	Each digested Batch	1/extraction day	1/day
Trip Blanks	NA	1/day	1/day
Calibration Standards	Initial & Continuing	1/12 hours	1/day
Laboratory Control	1/day	NA	1/day
Interference Check Standard	2/day (ICP)	NA	NA
Field Duplicate	1/sampling round	1/sampling round	NA
Surrogates	NA	each sample	NA
Tuning Compounds	NA	1/12 hours	NA

TABLE 2

QC LIMITS/INTERPRETATIONS

QC Requirements	Analysis	Limits/Interpretations
Calibration/Method Blanks	Metals	No response or below Detection Limit
	VOC/SVOC	Common solvents/chemicals <5 times Detection Limit
	Cyanide	Subtract from reading
Calibration Standards	Metals	90-110% Recovery except Mercury @ 80-120%
	VOC/SVOC	SPCC/CCC per EPA requirements and 70-130% Recovery
	Cyanide	Titration
Laboratory Control	Metals	80-120% Recovery
	Cyanide	80-120% Recovery
Interference Check Standard	Metals	± 20% of Mean
Field Duplicate	Metals VOC/SVOC	No established limits - simply report results
Surrogate	VOC	70-130% Recovery
	SVOC-Acids	10-130% Recovery
	SVOC-B/N	40-150% Recovery
Tuning Compounds	VOC-BFB	Per EPA Specifications
	SVOC-DFTPP	Per EPA Specifications

TABLE 3

INTERNAL STANDARDS/SURROGATE COMPOUNDS

GC/MS ANALYSIS

Test Group	Surrogate Compounds	Internal Standards
VOC	1,2-Dichloroethane, d4	Bromochloromethane
	Toluene, d6	1,4-Difluorobenzene
	Bromofluorobenzene	Chlorobenzene, d5
SVOC	Phenol, d5	1,4-Dichlorobenzene, d4
	2-Fluorophenol	Naphthalene, d8
	2,4,6-Tribromophenol	Acenaphthene, d10
	Nitrobenzene, d5	Phenanthrene, d10
	2-Fluorobiphenyl	Chrysene, d12
	Terphenyl	Perylene, d12

3.5 Documentation

All analytical results will be thoroughly documented (in ink) and will be of reproducible quality. This documentation will consist of at least the following:

* Complete Chain-of-Custody record for the sample.
* Records of all sample preparation work, including weights used, volumes used, and dilutions made.
* Traceability of chemicals used to prepare analytical standards, internal standards, and surrogate compounds.
* Documentation of manual calculations.

3.6 Data Validation

The Quality Assurance Officer is responsible for performing data validation. The tools used in this process include at least the following:

* Deionized water and method blanks should be reasonably low and consistent with historical values.
* Trip blanks should be reasonably low and consistent with data accumulated from previous events.
* Daily GC/MS acceptance criteria must have been met.
* Data Completeness (analysis conducted which meets QA/QC requirements) should be in excess of 90%.

3.2e Sampling Methods

Samples taken from the drum wastes for identification and characterization are collected using glass disposable composite liquid waste samplers (coliwasas). The coliwasas give a complete cross section of the material in the drum and have been recommended in SW-846 as the correct sampling equipment for drummed liquids. Each glass coliwasa is rinsed between uses and is only used within a particular family of chemicals (chlorinated or non-chlorinated solvents). They are normally discarded after a few uses. The site Environmental Engineer collects the samples from the drums in Building 35. Alternately, samples may be taken by contract personnel.

Samples taken from small laboratory chemical jars are collected using a small trier or spatula. The trier or spatula allow the collection of a sample of dry powders and very viscous materials. Lab chemicals that are in liquid form are sampled using glass pipettes. The pipettes yield a complete cross section of material in the jar. These samples are also taken by the Site Environmental Engineer in Building 35, or, as stated above, by contract personnel.

To ensure that an adequate number of samples are taken to reflect the variability of the waste during the semi-annual and annual samples, a random sampling strategy is employed. The samples are collected from 10% of the containers chosen, at random, and the samples are analyzed either individually or are composited. Semi-annual samples are individually analyzed for indicator parameters and VOCs. Annual samples are composited for the entire characterization. Samples intended for VOC analysis will not be composited, mixed, or otherwise aerated.

Once a sample is taken, it is placed in an appropriate container and preserved as shown in Figure 3-7. The bottles and jars are packed in an ice chest and cooled and subsequently shipped via same-day or overnight delivery to the contract laboratory.

Sample labels as shown in Figure 3-8 and chain of custody records, such as shown in Figure 3-9 accompany all samples as they are taken and shipped. The site engineer fills out the sample label with the applicable information identifying what material the sample was taken from and attaches it to the sample container.

The chain of custody form is also filled out by the site engineer, signed by the transportation company and accompanies the samples to the contract laboratory.

Completed chain of custody forms are returned with sample results.

3.2f Frequency of Analysis

Samples of the waste solvents will be taken and analyzed on a semi-annual basis for general indicator parameters and annually for full scale chemical and physical characterization. Samples of unknowns will be taken on an as needed basis. At a minimum, the samples will be taken before the materials are transferred to Building 35 in order to determine the compatibilities of the materials prior to storage.

3.2g Additional Requirements for Wastes Generated Off Site

The waste material generated off site are comparable to the solvent waste generated at the Miles Avenue complex. As such, they will undergo semi-annual and annual sampling following the same guidelines as given above. No additional requirements are needed in order to provide periodic waste analysis of the materials. Should any unknowns or new waste be generated at the off site facilities, then the procedures and approach for unknown material characteristics will be employed prior to shipping the material to Miles Avenue.

In order to verify that the wastes shipped from the off site, Bayer facilities correspond to our knowledge of the waste, a manifest and pH check will be done on each drum of waste. In addition, the generating plant will be contacted to verify the origin of the shipment.

3.2h Additional Requirements of Ignitable, Reactive, or Incompatible Wastes

The information provided in previous sections of the Waste Analysis Plan is sufficient to characterize the waste generated at Bayer in order to store the material. Ignitable materials will have their flash point checked during periodic analyses or during identification of unknowns. Reactive materials and incompatible lab chemicals will be identified through the compatibility charts given in Appendix E and segregated. No additional testing procedures are required.

Figure 3-7

Required Containers, Preservation Techniques, and Holding Times for Waste Analysis Samples

Parameter or Characteristic	Container(1)	Preservation Technique	Maximum Holding Time
Ignitability Flash Point	G, Teflon-lined cap	Cool, 4 C	28 days
Corrosivity pH	G, Teflon-lined cap	Cool, 4 C	Analyze Immediately
Reactivity:			
Cyanide	G, Teflon-lined cap	Cool, 4 C, NaOH to pH>12	14 days
Sulfide	G, Teflon-lined cap	Cool, 4 C, NaOH to pH>9	7 days
TCLP Metals:			
Chromium VI	G, Teflon-lined cap	Cool, 4 C	24 hours
Mercury	G, Teflon-lined cap	HNO3 to pH<2	28 days
Barium	G, Teflon-lined cap	HNO3 to pH<2	6 months
Cadmium	G, Teflon-lined cap	HNO3 to pH<2	6 months
Lead	G, Teflon-lined cap	HNO3 to pH<2	6 months
Selenium	G, Teflon-lined cap	HNO3 to pH<2	6 months
Silver	G, Teflon-lined cap	HNO3 to pH<2	6 months
Total Organic Halogens	G, Teflon-lined septum(2)	Cool, 4 C, H2SO4 to pH<2	7 days
Total Organic Carbon	G, Teflon-lined septum(2)	Cool, 4 C, H2SO4 or HCl to pH<2	28 days
Volatile Organics	G, Teflon-lined septum(2)	Cool, 4 C, 0.008% Na2S2O3	14 days
Semivolatile Organics	G, Teflon-lined septum(2)	Cool, 4 C, 0.008% Na2S2O3	14 days

(1) G=glass
(2) Zero head space allowed

Figure 3-7 (con't)

Required Containers, Preservation Techniques, and Holding Times for Waste Analysis Samples

Parameter or Characteristic	Container(1)	Preservation Technique	Maximum Holding Time
Pesticides and PCBs	G, Teflon-lined septum(2)	Cool, 4 C	40 days
TCLP	G, Teflon-lined septum(2)	Cool, 4 C	14 days

(1) G=glass
(2) Zero head space allowed

Figure 3-8

Sample Label

Bayer

Bayer Corporation Chain-of-Custody Number: _____

Sample Type: _____

Plant: _____

Sample Location: _____

Sampler: _____

Date: _____ Time: _____

Comments: _____

Preservative: _____

93-507-CMP Rev. 4/95

Chain-of-Custody Record

Bayer

Bayer Corporation
P.O. Box 40
Elkhart, IN 46515
Phone (219) 262-7234

Figure 3-9

NO. _____

Sampling Site	Sampler	Telephone No.

Item Number	Sample Number	Number & Size Of Containers	Description	Transfer Number & Check 1	2	3	4	5	6	7

Person Responsible for Sample	Affiliation	Date	Time

Purpose of Analysis (Use Back of Sheet If Necessary)

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1					
2					
3					
4					
5					
6					
7					

ELK-21111-CMP (3.463)

3.3 Recordkeeping Requirements

Applicable notifications and/or certifications for compliance with land disposal restrictions are prepared for all wastes prior to shipment off-site. Determinations are based on results from waste analysis as described in section 3.2 or by generator knowledge of a specific waste.

Copies of notification/certifications accompany each manifest associated with a off-site shipment of hazardous waste. Copies are also maintained with the appropriate facility copies of each manifest on site as a permanent part of the facility operating record. These records will be maintained at least through the closure of the facility.

3.3a Retention of Generator Notification/Certification

All incoming waste shipments to the Bayer, Miles Avenue TSD must be accompanied by a land disposal restriction notification/certification. These documents are evaluated on a per shipment basis according to criteria described in section 3.2. These documents, along with the associated manifests, are kept as a permanent part of the facility operating record.

3.3b Requirements Pertaining to the Storage of Restricted Wastes in Containers

Wastes are stored at this facility for the sole purpose of accumulating sufficient quantities to facilitate treatment, recovery, or disposal. Containers with accumulation dates indicating storage approaching one year are routinely evaluated to determine if limitations on treatment, recovery, or disposal exist that may make storage greater than one year necessary.

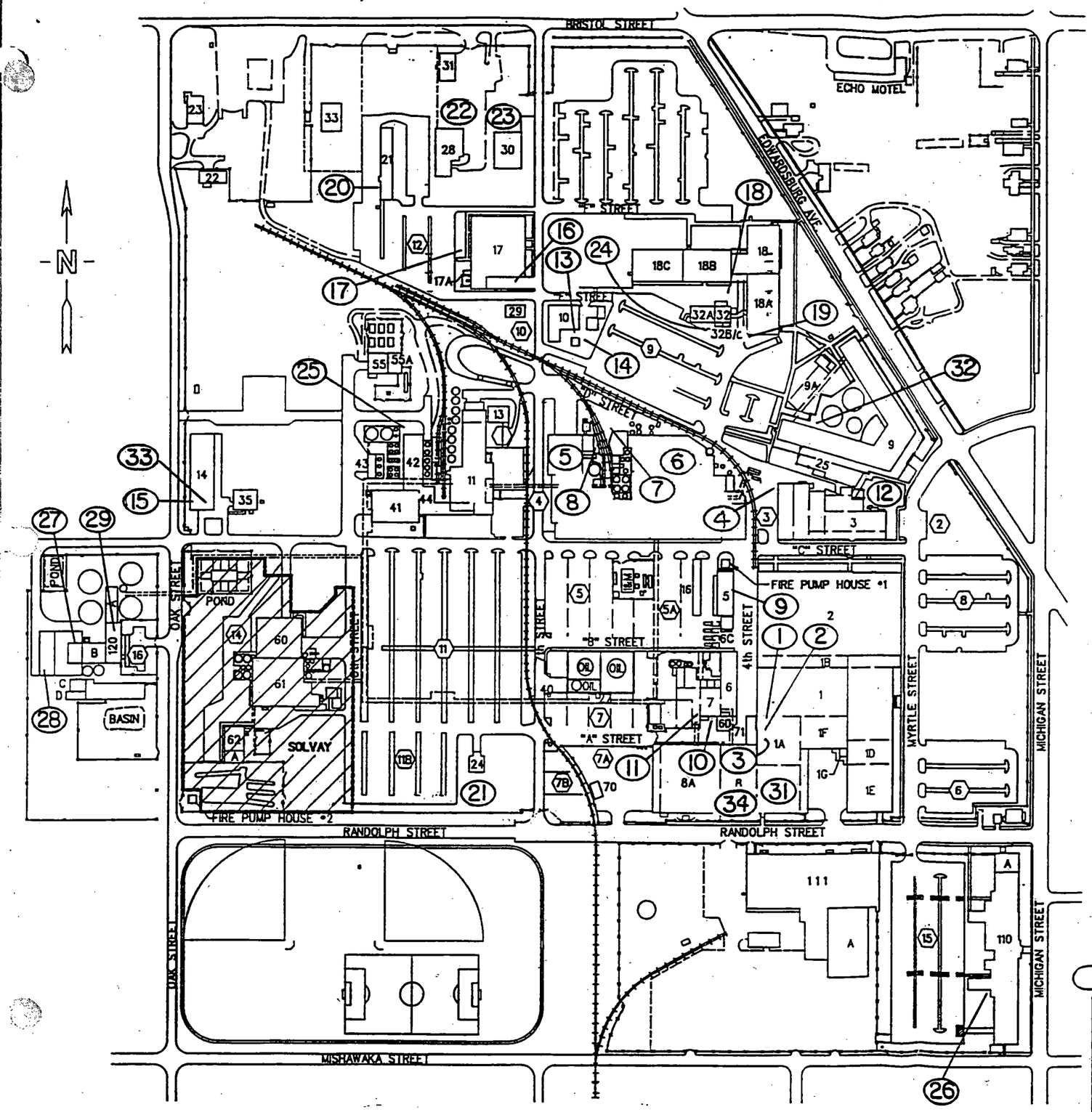
Consistent with our internal practices, all waste containers are clearly labeled with contents and start of accumulation dates. This practice is verified by weekly facility inspections.

FIGURE 10-1

SOLID WASTE MANAGEMENT UNITS - MILES AVENUE

UNIT NO.	LOCATION	TYPE	STATUS
1	BUILDING 1 - SOMAT	TRASH	ACTIVE
2	BUILDING 1 - CORRUGATED	TRASH	ACTIVE
3	BUILDING 1 - CLINITEST	HAZARDOUS	DISCONTINUED
4	BUILDING 3	TRASH	ACTIVE
5	BUILDING 4 - MAINTENANCE	TRASH	ACTIVE
6	BUILDING 4 - MYCELIUM	SPECIAL	ACTIVE
7	BUILDING 4 - CARBON	SPECIAL	ACTIVE
8	BUILDING 4 - TANK	WASTEWATER	ACTIVE
9	BUILDING 5	TRASH	ACTIVE
10	BUILDING 7	TRASH	ACTIVE
11	BUILDING 7 - BOILER	HAZARDOUS	DISCONTINUED
12	BUILDING 9 - TANK	WASTEWATER	ACTIVE
13	BUILDING 10 - TANK	WASTEWATER	ACTIVE
14	BUILDING 10 - TANK	WASTEWATER	DISCONTINUED
15	BUILDING 14 - PCB	SPECIAL	ACTIVE
16	BUILDING 17 - TANK	WASTEWATER	ACTIVE
17	BUILDING 17	TRASH	ACTIVE
18	BUILDING 18 - TANK	WASTEWATER	ACTIVE
19	BUILDING 18	TRASH	ACTIVE
20	BUILDING 21	TRASH	ACTIVE
21	BUILDING 24 (OLD CONTAINER STORAGE)	HAZARDOUS	CLOSED
22	BUILDING 28	TRASH	ACTIVE
23	BUILDING 30	TRASH	ACTIVE
24	BUILDING 32A - TANK	HAZARDOUS	IN CLOSURE
25	BUILDING 42 - TANK (1500)	HAZARDOUS	CLOSED
26	BUILDING 110	TRASH	ACTIVE
27	BUILDING 120 - SLUDGE	SPECIAL	ACTIVE
28	BUILDING 120	TRASH	ACTIVE
29	BUILDING 120	WASTEWATER	ACTIVE
30	AREA SEWER CONNECTIONS	WASTEWATER	ACTIVE
31	BUILDING 1 - INCINERATOR	TRASH	ACTIVE
32	BUILDING 9 - INCINERATOR	SPECIAL	ACTIVE
33	BUILDING 14 - WASTE OIL	SPECIAL	ACTIVE
34	BUILDING 8 - ACCUMULATION	HAZARDOUS	ACTIVE

FIGURE 10-2: SOLID WASTE MANAGEMENT UNITS



BUILDINGS

1	MAIN BLDG COMPLEX
2	H & R OFFICES & SHOPS
3	RESEARCH & PILOT
4	CITRIC
5	MAINTENANCE WAREHOUSE
6	REFRIGERATION
7	POWER
8	MFG. & WAREHOUSE
9	RESEARCH
10	CHEMICAL PILOT PLANT
11	DEXTROSE
13	DEXTROSE STORAGE
14	SURPLUS EQUIPMENT
16	MAINTENANCE GARAGE
17	H & R RESEARCH
18	DIAGNOSTICS LABS.
21	VACANT
22	VACANT
23	LEASED (PAN FLUTES)
24	SOLVENT STORAGE
25	CHILLER
27	FUEL OIL PUMP HOUSE
28	STORAGE
29	UTILITIES
30	GARDENER
31	STORAGE
32	REAGENT PILOT PLANT
33	MEDIA ARTS
35	HAZ. SOLV. & CHEM. STORAGE
40	WASTE WATER MONITORING
41	SOLVENT EXTRACTION
42	SOLVENT EXTRACTION
43	SOLVENT EXTRACTION
44	SOLVENT EXTRACTION
55	SATELLITE R.M.B.
60	ENZYME WAREHOUSE (SOLVAY)
61	ENZYME (SOLVAY)
62	ENZYME DEVELOP. LAB (SOLVAY)
70	VEHICLE STORAGE
71	SODA UNLOADING
72	GLUTEN UNLOADING
110	TRAINING, TRAFFIC & I.S.
111	LEASED (AACOA)
120	WASTE WATER TREATMENT

PARKING LOTS

LOT NO.	SPACES
2	12
3	18
4	18
5	153
5A	32
6	109
7	91
7A	18
7B	44
8	145
9	258
10	8
11	488
11A	33
11B	125
12	171
13	295
14	52
15	103
16	12
	2185

BASEMENT PARKING

BLDG. NO.	SPACES
1, 1D & 1E	97
9 & 18	62
	159

LAND: 126.03 ACRES
5.95 " (SOLVAY)
131.91 ACRES TOTAL

BUILDINGS: 1,748,660 SQ. FT.
(EXCLUDES SOLVAY)

○-INDICATES UNIT NO.

NO.	DATE	BY	CK.	REVISION
IV				
III				
II				
①	11-5-90	JBP		REDRAWN & REVISED PREVIOUS CHANGES OMITTED

DR. HARTZLER	DATE 8-1-80
CHK.	APPR.
SCALE 1"=280' APPROX.	
P.L. NO.	
PRINT DATE	

MILES

MILES INC. ELKHART, INDIANA

LAYOUT - BUILDINGS & GROUNDS
ELKHART MAIN PLANT

P96PLOT3.DGN (LEV. 2,3)

DRG. NO. H-13591-1B

There are two additional active special waste management units for collection and short-term storage of waste oils and PCB containing materials. Note that these two areas, both in Building 14, are physically separated to avoid commingling of PCB and non-PCB containing wastes.

Solid waste management units for hazardous wastes, or non-RCRA wastes with hazardous constituents, consists of storage and disposal locations that are either discontinued (non-RCRA wastes) or in closure (RCRA wastes). Previously active SWMU's for hazardous wastes include tank storage, container storage, and burning of solvent waste in a boiler.

In addition to the storage facility for which this permit is being submitted, there is one other active less than 90 day accumulation area for hazardous Consumer Care division product waste.

Solid waste management units for wastewaters consists of three separate types: neutralization tanks, wastewater treatment systems, and area process sewers. All units are tied to the Elkhart municipal wastewater collection and treatment system. Each will be more fully described below.

Specific Characterization

1. Building 1 - SOMAT

This SWMU is a active collection location for general plant trash. As mentioned above, general plant trash consists of scrap paper, corrugated paper products, scrap non-hazardous production wastes, returned goods, wood and cafeteria wastes. The Building 1 SOMAT area houses a shredder for destruction of non-hazardous production waste and two 22 cubic yard dumpsters for collection of the waste. These dumpsters are located in a loading dock area with a floor of concrete and asphalt. The dumpsters are removed several times a day with the waste taken to HIMCO/Earthmover's landfill. No hazardous wastes are managed in this unit. A special waste certification is in place covering the non-hazardous production waste processed through this unit.

2. Building 1 - Corrugated

This SWMU is an active collection location for scrap corrugated paper products (boxes) which are destined for recycling. No other wastes, hazardous or non-hazardous, are placed here. Scrap boxes are placed in a 16 cubic yard compactor/lugger for recycling.

3. Building 1 - Clinitest

This SWMU was an area where solid waste tablets of a scrapped diagnostic product were dissolved and neutralized. The tablets contained soda ash, caustic soda, citric acid, and small quantities of copper sulfate. The dissolved and neutralized materials were flushed to a POTW and the remaining inert solid packaging was landfilled off site.

This process took place in an enclosed area inside Building 1 and was discontinued in 1985.

4. Building 3
5. Building 4 - Maintenance

These SWMU's are active sites and consist of general trash dumpsters.

6. Building 4 - Mycelium

In the fermentation process for the production of citric acid, a biomass is formed which is filtered from the broth and discarded. This mycelium biomass is collected in a hopper and routinely transferred to several dumpsters for shipment off site. Mycelium is both disposed in a sanitary landfill as a special waste and shipped off site for re-use/recycling as an animal feed supplement. One hopper and up to two dumpsters are used in this active SWMU which is located in an area with an asphalt base.

7. Building 4 - Carbon

In the fermentation process, activated carbon is used to polish several of the production streams. Unlike carbon used for waste treatment, this carbon has not come in contact with hazardous constituents.

It is collected in a dumpster and either sent to a recycler for regeneration or sent to a sanitary landfill for disposal as a special waste. One trash dumpster is used to collect the carbon. As with SWMU #6, this dumpster is located on asphalt.

8. Building 4 - Tank

Prior to the discharge of wastewater from the citric acid fermentation process, the water is placed in an equalization tank and magnesium hydroxide is added for pH adjustment. The water is then passed on to the Bayer wastewater treatment plant and ultimately to the Elkhart municipal wastewater treatment plant. The wastewater accumulated in this tank is a moderate COD waste.

9. Building 5
10. Building 7

These SWMU's are active sites and consist of general trash dumpsters.

11. Building 7 - Boiler

One of the former waste operations that has been halted is the burning of waste solvents in the plant's Boiler #4. Solvents such as acetone were pumped into the boiler from drums for destruction. The air discharge was permitted with the State Air Quality authority but the practice has been terminated.

Transfers from the drums took place in an area adjacent to the boilerhouse. The burning of solvents in the plant boiler was ceased in 1985.

12. Building 9 - Tank

In research and development activities for medical diagnostic applications, small amounts of wastewater are generated which require pH adjustment prior to final discharge to the municipal sewer system. The neutralization system at Building 9 is an external below-grade concrete tank. The system is for pH adjustment only.

13. Building 10 - Tank
14. Building 10 - Tank

SWMU's number 13 and 14 are neutralization tanks at Building 10. Number 13 is an active aboveground tank that is inside Building 10. It is a replacement for number 14, an inactive in-ground vault outside the building.

Building 10 is a pilot plant and small scale chemical production unit and the neutralization tank serves as an equalization and pH adjustment process for wastewaters prior to discharge to the Elkhart Wastewater Treatment Utility.

15. Building 14 - PCB

When PCB items are removed from service at the Miles Avenue complex, the materials (transformers, capacitors, etc.) are stored temporarily inside Building 14. This facility, which has a concrete floor, also serves as a general equipment storage warehouse. All storage is inside the building.

16. Building 17 - Tank

This SWMU is similar to the other neutralization system SWMU's on-site. Wastewaters from biotechnology research and development activities are neutralized (pH adjustment only) prior to discharge to the local municipal wastewater treatment facility. The unit is a tank in a concrete vault outside the building.

17. Building 17

This SWMU is an active site and consists of a general trash dumpster.

18. Building 18 - Tank

This SWMU is also similar to the other neutralization system SWMU's on-site. Wastewaters from diagnostic research and development activities are neutralized prior to discharge to the local municipal water treatment system. This unit is a tank system and is on the basement floor of Building 18.

19. Building 18
20. Building 21

These SWMU's are active sites and consist of general trash dumpsters.

21. Building 24
(Old Container Storage Facility)

The old container storage facility served as the precursor to Building 35 for the storage of waste solvents at Bayer. The asphalt pad was used to store drums of chlorinated and nonchlorinated wastes prior to shipment off site and was operated under interim status until Building 35 was constructed in 1985. A Closure Plan was submitted for the site on November 12, 1985. This Closure Plan has been executed. As of November, 1995, this unit has been accepted as closed by IDEM.

22. Building 28
23. Building 30

These SWMU's are active sites and consist of general trash dumpsters.

24. Building 32A - Tank

The 250-gallon storage tank is a vaulted tank that serves as a collection tank for hazardous wastes from the processes in Building 32A. The facility is a pilot lab conducting extraction research and paper impregnation testing for diagnostic product applications.

Small quantities of hazardous solvents, such as toluene, methanol and acetone, are generated during these tests and are flushed into the 250-gallon tank with rinse water. Since 1986 the tank has been operated under interim status as a storage facility, however, the decision has been made to close the tank and operate it only as an accumulation tank. The tank has not been used for waste accumulation since 1988 and has been removed from the Part A application for the Miles Avenue complex. A Closure Plan has been submitted for the tank.

25. Building 42 - Tank (1500 gallon)

This SWMU is a 1500-gallon storage tank previously used to store hazardous oily waste.

The tank served as a storage tank for waste from the Citric Acid Plant from 1980 to 1986. Typical wastes that would have been stored in the tank include wastewater containing low levels of chromium, isopropanol, acetone and dichloroethane.

A Closure Plan for the tank was submitted to IDEM on July 30, 1986, and has been executed. This unit was accepted as closed by IDEM in 1993.

26. Building 110

This SWMU is an active site and consists of a general trash dumpster.

27. Building 120 - Sludge

In the wastewater treatment facility (SWMU #29), a dewatered filter cake/sludge is accumulated in dumpsters. The sludge is considered a special waste and is routinely removed for disposal in a local sanitary landfill. The dumpsters accumulating the waste are contained on a concrete pad.

28. Building 120

This SWMU is an active site and consists of a general trash dumpster.

29. Building 120 - WWTP

The Wastewater Treatment Plant at Bayer serves the citric production plant of the Bayer subsidiary Haarmann & Reimer, and the enzyme production plant of Solvay. It pretreats the waste from these operations prior to discharging the effluent to the Elkhart Wastewater Treatment Utility under a Significant Industrial User pre-treatment agreement with the City. The treatment plant has been operating since 1985. The process combines equalization, pH adjustment, clarification and anaerobic digestion using the Bacardi process.

Effluents to the Elkhart POTW are monitored on a weekly and monthly basis.

30. Area Sewer Connections

Throughout the Miles Avenue complex, wastewater drains are tied into the Elkhart municipal wastewater treatment system. The only exceptions are for the wastewater treatment plant indicated above, non-contact cooling water, and storm water run-off.

Small amounts of process wastewater from manufacturing and research and development activities are disposed into the sewer system as well as the domestic waste generated on-site. These sewer lines are indicated in the drawings of Appendix B of this application.

31. Building 1 - Incinerator

This SWMU is a small incinerator with a capacity of 150 to 250 pounds/hour. It is located in the basement of Building 1 in a secured area. The materials burned include competition sensitive papers from offices and small amounts of corrugated paper products. No hazardous wastes are burned in this incinerator.

32. Building 9 - Incinerator

This SWMU is also a small incinerator with a capacity of 200 pounds per hour. It is located in the basement of Building 9 in a restricted area. The wastes burned include paper, corrugated paper products, laboratory animals and animal bedding. No hazardous wastes are burned in this incinerator.

33. Building 14 - Used Oil Storage Cage

This SWMU consists of an enclosed, secure area for the short term storage of drum quantities of used oil and/or coolant products. Secondary containment pallets are provided for the storage of all liquid material. These waste streams are typically shipped off-site using a licensed waste oil reprocessor for recycling as an industrial fuel. This SWMU is in a separate physical location from the PCB storage unit listed above (SWMU #15).

34. Building 8 - Less Than 90 Day Accumulation Area for Consumer Care Product Waste

In this area, non-salable consumer products (damaged, out-of-date, off-specification) containing hazardous constituents are sorted and accumulated for shipment off-site to a Bayer approved licensed TSDF. No waste is accumulated in this area for longer than 90 days.

10.2 Releases From Solid Waste Management Units

No known releases of hazardous constituents have occurred from any of the existing or former non-hazardous solid waste management units at the Miles Avenue complex. The solid waste management units used for hazardous waste storage are either closed or undergoing closure. We are presently unaware of any releases of hazardous constituents that have not been addressed and/or remediated from the hazardous solid waste management units.

Hazardous Waste Storage Permit Renewal Application Volume 2

Miles Avenue Site
March, 1996

Bayer

Bayer Corporation
1884 Miles Avenue
Elkhart, IN 46514

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 9-30-86
GSA No. 0248-EPA-OT

For EPA Regional Use Only

Date Received
Month Day Year

United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the instructions before starting)

I. Installation's EPA ID Number *(Mark 'X' in the appropriate box)*

[ ] A. First Part A Submission [X] B. Part A Amendment #_____

C. Installation's EPA ID Number

I N D 0 0 5 0 6 8 7 0 5

D. Secondary ID Number *(If applicable)*

II. Name of Facility

B A Y E R C O R P O R A T I O N

III. Facility Location *(Physical address not P.O. Box or Route Number)*

A. Street

1 8 8 4 M I L E S A V E N U E

Street *(Continued)*

City or Town

E L K H A R T

State

I N

Zip Code

4 6 5 1 4 — 2 2 0 1

County Code *(If known)*

County Name

E L K H A R T

B. Land Type (Enter code)

P

C. Geographic Location

LATITUDE (Degrees, Minutes, & Seconds)

4 1 4 1 0 5 6

LONGITUDE (Degrees, Minutes & Seconds)

0 8 5 5 9 0 2 5

D. Facility Existence Date

Month Day Year

0 6 0 1 1 9 8 5

IV. Facility Mailing Address

Street or P.O. Box

P . O . B O X 4 0

City or Town

E L K H A R T

State

I N

Zip Code

4 6 5 1 5 — 0 0 4 0

V. Facility Contact *(Person to be contacted regarding waste activities at facility)*

Name *(Last)*

S C O T T

(First)

R . L E N N I E

Job Title

D I R E C T O R , H E S

Phone Number *(Area Code and Number)*

2 1 9 — 2 6 2 — 7 2 3 4

VI. Facility Contact Address *(See instructions)*

A. Contact Address Location [ ] Mailing [X] Other [ ]

B. Street or P.O. Box

City or Town

State

Zip Code

—

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 9-
GSA No. 0248-EF

EPA I.D. Number *(Enter from page 1)*: IND005068705

Secondary ID Number *(Enter from page 1)*:

VII. Operator Information *(See instructions)*

Name of Operator: BAYER CORPORATION

Street or P.O. Box: 1884 MILES AVENUE

City or Town: ELKHART

State: IN

ZIP Code: 46514-220

Phone Number *(Area Code and Number)*: 219-264-8111

B. Operator Type: P

C. Change of Operator Indicator: Yes [ ] No [X]

Date Changed Month Day Ye

VIII. Facility Owner *(See instructions)*

A. Name of Facility's Legal Owner: BAYER CORPORATION

Street or P.O. Box: ONE MELLON CENTER 500 GRANT S

City or Town: PITTSBURGH

State: PA

ZIP Code: 15219-250

Phone Number *(Area Code and Number)*: 412-394-5500

B. Owner Type: P

C. Change of Owner Indicator: Yes [ ] No [X]

Date Changed Month Day Ye

IX. SIC Codes *(4-digit, in order of significance)*

Primary		Secondary	
2834	(Description) PHARMACEUTICAL PREPARATIONS	2869	(Description) INDUSTRIAL ORGANIC CHEMICALS, NEC
Secondary		**Secondary**	
2046	(Description) WET CORN MILLING		(Description)

X. Other Environmental Permits *(See instructions)*

A. Permit Type *(Enter code)*	B. Permit Number	C. Description
		ATTACHED

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

EPA I.D. Number (Enter from page 1)

	N	D	0	0	5	0	6	8	7	0	5

Secondary ID Number (Enter from page 1)

Nature of Business (Provide a brief description)

BAYER CORPORATION, MILES AVENUE SITE MANUFACTURES HEALTHCARE AND FOOD-RELATED PRODUCTS

XII. Process Codes and Design Capacities

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in item XIII.

B. PROCESS DESIGN CAPACITY - For each code entered in column A, enter the capacity of the process.

1. AMOUNT - Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.
2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

C. PROCESS TOTAL NUMBER OF UNITS - Enter the total number of units used with the corresponding process code.

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet or Hectare-meter
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day r Liters Per Day
D83	Surface Impoundment	Gallons or Liters
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
S01	Container (Barrel, Drum, Etc.)	Gallons or Liters
S02	Tank	Gallons or Liters
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment	Gallons or Liters
S05	Drip Pad	Gallons or Liters
S06	Containment Building-Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank	Gallons Per Day or Liters Per Day
T02	Surface Impoundment	Gallons Per Day or Liters Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; or Btu's Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T80	Boiler	Gallons or Liters
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T88	Titanium Dioxide Chloride Process Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed in 40 CFR §260.10	
T94	Containment Building-Treatment	Cubic Yards or Cubic Meters
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; or Kilograms Per Hour
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
X04	Geologic Repository	Cubic Yards or Cubic Meters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's Per Hour	I

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Form Approved, OMB No. 2050-0034 Expires 9
GSA No. 0248-E

EPA I.D. Number (Enter from page 1)

I	N	D	0	0	5	0	6	8	7	0	5

Secondary ID Number (Enter from page 1)

XII. Process Codes and Design Capabilities (Continued)

EXAMPLE FOR COMPLETING ITEM XII (Shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. PROCESS DESIGN CAPACITY 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	For Official Use Only
X 1	S 0 2	5 3 3 . 7 8 8	G	0 0 1	
1	S 0 1	(DRUM STORAGE) 15 . 840	G	1	
2	S 0 1	(LAB CHEM STORAGE) 1 . 400	G	1	
3		.			
4		.			
5		.			
6		.			
7		.			
8		.			
9		.			
10		.			
11		.			
12		.			
13		.			

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in item XIII.

XIII. Other Processes (Follow instructions from item XII for D99, S99, T04 and X99 process codes)

Line Number (Enter as in seq w/XII)	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. PROCESS DESIGN CAPACITY 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	D. Description Of Process
X 1	T 0 4	.			In-situ Vitrification
1		.			
2		.			
3		.			
4		.			

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GSA No. 0248-EPA-OT

*EPA I.D. Number (Enter from page 1)												Secondary I.D. Number (Enter if any)											
N	D	0	0	5	0	6	8	7	0	5													

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous wastes: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter "000" in the extreme right box of Item XIV-D(1).
3. Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		A. EPA HAZARD WASTE NO. (Enter code)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter code)						(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X	1	K	0	5	4	900	P	T	0	3	D	8	0	
X	2	D	0	0	2	400	P	T	0	3	D	8	0	
X	3	D	0	0	1	100	P	T	0	3	D	8	0	
X	4	D	0	0	2									Included With Above

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GSA No. 0248-EP

EPA I.D. Number (Enter from page 1) ▶ | Secondary ID Number (Enter from page 1) ▶

I	N	D	0	0	5	0	6	8	7	0	5

XIV. Description of Hazardous Wastes (Continued) ▶

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D001	50	T	S01	
2	D004				Included with Above
3	D007				Included with Above
4	D008				Included with Above
5	D009				Included with Above
6	D010				Included with Above
7	D011				Included with Above
8	D018				Included with Above
9	D035				Included with Above
10	D038				Included with Above
11	F003				Included with Above
12	F005				Included with Above
13					
14	D001	5	T	S01	
15	D004				Included with Above
16	D007				Included with Above
17	D008				Included with Above
18	D009				Included with Above
19	D010				Included with Above
20	D011				Included with Above
21	D019				Included with Above
22	D022				Included with Above
23	D028				Included with Above
24	D029				Included with Above
25	F001				Included with Above
26	F002				Included with Above
27	F003				Included with Above
28					
29					
30					
31					
32					
33					

EPA I.D. Number (Enter from page 1)

N	D	0	0	5	0	6	8	7	0	5

Secondary ID Number (Enter from page 1)

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter "000" in the extreme right box of Item XIV-D(1).
3. Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the wastes.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the wastes. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous wastes.

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter code)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

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Form Approved. OMB No. 2050-0034 Expires 9-3
GSA No. 0248-EPA

EPA I.D. Number (Enter [illegible]) | Secondary ID Number (Enter [illegible])

I	N	D	0	0	5	0	6	8	7	0	5

XIV. Description of Hazardous Wastes (Continued)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. Processes (1) Process Codes (Enter code)	D. Processes (2) Process Description (If a code is not entered in D(1))
1	D001	1	T	S01	
2	D004				Included with Above
3	D007				Included with Above
4	D008				Included with Above
5	D009				Included with Above
6	D010				Included with Above
7	D011				Included with Above
8	D018				Included with Above
9	D019				Included with Above
10	D022				Included with Above
11	D028				Included with Above
12	D029				Included with Above
13	D035				Included with Above
14	D038				Included with Above
15	F001				Included with Above
16	F002				Included with Above
17	F003				Included with Above
18	F005				Included with Above
19					
20					
21					
22					
23					
24					
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31					
32					
33					

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Form Approved, OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

* EPA I.D. Number (Enter from page 1)												Secondary I.D. Number (Enter from page 1)											
T	N	D	0	0	5	0	6	8	7	0	5												

XIV. Description of Hazardous Wastes

A. **EPA HAZARDOUS WASTE NUMBER** - Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes(s).

B. **ESTIMATED ANNUAL QUANTITY** - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. **UNIT OF MEASURE** - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. **PROCESS CODES:**

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter "000" in the extreme right box of Item XIV-D(1).
3. Enter in the space provided on page 7, Item XIV-E, the line number and the additional code(s).

2. **PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter code)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

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Form Approved, OMB No. 2050-0034 Expires 9
GSA No. 0248-EI

EPA I.D. Number (Enter from page 1) | Secondary ID Number (Enter from page 1)

I	N	D	0	0	5	0	6	8	7	0	5												

XIV. Description of Hazardous Wastes (Continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D 0 0 1	1	T	S 0 1	
2	D 0 0 2	1	T	S 0 1	
3	D 0 0 3	200	P	S 0 1	
4	D 0 0 4	200	P	S 0 1	
5	D 0 0 5	500	P	S 0 1	
6	D 0 0 6	200	P	S 0 1	
7	D 0 0 7	200	P	S 0 1	
8	D 0 0 8	10	T	S 0 1	
9	D 0 0 9	500	P	S 0 1	
10	D 0 1 0	200	P	S 0 1	
11	D 0 1 1	500	P	S 0 1	
12	D 0 1 8	200	P	S 0 1	
13	D 0 1 9	100	P	S 0 1	
14	D 0 2 2	100	P	S 0 1	
15	D 0 2 8	100	P	S 0 1	
16	D 0 3 5	100	P	S 0 1	
17	D 0 3 8	100	P	S 0 1	
18	D 0 4 0	100	P	S 0 1	
19	P 0 0 3	100	P	S 0 1	
20	P 0 0 5	100	P	S 0 1	
21	P 0 0 8	100	P	S 0 1	
22	P 0 0 9	100	P	S 0 1	
23	P 0 1 0	100	P	S 0 1	
24	P 0 1 1	100	P	S 0 1	
25	P 0 1 2	100	P	S 0 1	
26	P 0 1 8	100	P	S 0 1	
27	P 0 2 2	100	P	S 0 1	
28	P 0 2 4	100	P	S 0 1	
29	P 0 2 8	100	P	S 0 1	
30	P 0 2 9	100	P	S 0 1	
31	P 0 3 0	100	P	S 0 1	
32	P 0 4 6	100	P	S 0 1	
33	P 0 4 8	100	P	S 0 1	

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Form Approved, OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

1 EPA I.D. Number (Enter from page 1)											2 Secondary ID Number (Enter from page 1)													
N	D	0	0	5	0	6	8	7	0	5														

XIV. Description of Hazardous Wastes

A. **EPA HAZARDOUS WASTE NUMBER** - Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. **ESTIMATED ANNUAL QUANTITY** - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. **UNIT OF MEASURE** - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. **PROCESS CODES**

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter "000" in the extreme right box of item XIV-D(1).
3. Enter in the space provided on page 7, item XIV-E, the line number and the additional code(s).

2. **PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the wastes in column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous wastes.

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter code)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 9-
GSA No. 0248-EF

EPA I.D. Number (Enter from page 1): I N D 0 0 5 0 6 8 7 0 5

Secondary ID Number (Enter from page 1):

XIV. Description of Hazardous Wastes (Continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	P054	100	P	S01	
2	P068	100	P	S01	
3	P075	100	P	S01	
4	P077	100	P	S01	
5	P087	100	P	S01	
6	P095	100	P	S01	
7	P098	100	P	S01	
8	P105	100	P	S01	
9	P106	100	P	S01	
10	U001	100	P	S01	
11	U002	100	P	S01	
12	U003	100	P	S01	
13	U004	100	P	S01	
14	U006	100	P	S01	
15	U007	100	P	S01	
16	U008	100	P	S01	
17	U009	100	P	S01	
18	U012	100	P	S01	
19	U019	100	P	S01	
20	U021	100	P	S01	
21	U031	100	P	S01	
22	U032	100	P	S01	
23	U037	100	P	S01	
24	U041	100	P	S01	
25	U043	100	P	S01	
26	U044	100	P	S01	
27	U048	100	P	S01	
28	U050	100	P	S01	
29	U052	100	P	S01	
30	U055	100	P	S01	
31	U056	100	P	S01	
32	U057	100	P	S01	
33	U067	100	P	S01	

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Form Approved. OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

EPA I.D. Number (Enter from page 1)												Secondary ID Number (Enter from page 1)											
N	D	0	0	5	0	6	8	7	0	5													

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter "000" in the extreme right box of item XIV-D(1).
3. Enter in the space provided on page 7, item XIV-E, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste; in column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter code)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 9-
GSA No. 0248-EP

EPA I.D. Number (Enter from page 1): I N D 0 0 5 0 6 8 7 0 5

Secondary ID Number (Enter from page 1):

XIV. Description of Hazardous Wastes (Continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U 0 6 9	100	P	S 0 1			
2	U 0 7 0	100	P	S 0 1			
3	U 0 7 1	100	P	S 0 1			
4	U 0 7 2	100	P	S 0 1			
5	U 0 7 6	100	P	S 0 1			
6	U 0 7 7	100	P	S 0 1			
7	U 0 8 0	100	P	S 0 1			
8	U 0 8 1	100	P	S 0 1			
9	U 0 8 2	100	P	S 0 1			
10	U 0 8 3	100	P	S 0 1			
11	U 0 8 4	100	P	S 0 1			
12	U 0 8 8	100	P	S 0 1			
13	U 0 9 2	100	P	S 0 1			
14	U 0 9 7	100	P	S 0 1			
15	U 1 0 2	100	P	S 0 1			
16	U 1 0 5	100	P	S 0 1			
17	U 1 0 6	100	P	S 0 1			
18	U 1 0 7	100	P	S 0 1			
19	U 1 0 8	100	P	S 0 1			
20	U 1 1 2	100	P	S 0 1			
21	U 1 1 5	100	P	S 0 1			
22	U 1 1 7	100	P	S 0 1			
23	U 1 1 9	100	P	S 0 1			
24	U 1 2 2	100	P	S 0 1			
25	U 1 2 3	100	P	S 0 1			
26	U 1 2 4	100	P	S 0 1			
27	U 1 2 5	100	P	S 0 1			
28	U 1 3 3	100	P	S 0 1			
29	U 1 3 4	100	P	S 0 1			
30	U 1 3 5	100	P	S 0 1			
31	U 1 3 6	100	P	S 0 1			
32	U 1 3 8	100	P	S 0 1			
33	U 1 4 4	100	P	S 0 1			

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Form Approved, OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

EPA I.D. Number (Enter from page 1)												Secondary ID Number (Enter from page 1)												
	N	D	0	0	5	0	6	8	7	0	5													

XIV. Description of Hazardous Wastes

A. **EPA HAZARDOUS WASTE NUMBER** - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. **ESTIMATED ANNUAL QUANTITY** - *For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. **UNIT OF MEASURE** - *For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. **PROCESS CODES:**

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of item XIV-D(1).*
3. *Enter in the space provided on page 7, item XIV-E, the line number and the additional code(s).*

2. **PROCESS DESCRIPTION:** *If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.*
3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter code)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

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Form Approved. OMB No. 2050-0034 Expires 9-3
GSA No. 0248-EP/

EPA I.D. Number (Enter from page 1): IND005068705

Secondary ID Number (Enter from page 1):

XIV. Description of Hazardous Wastes (Continued)

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U147	100	P	S01	
2	U149	100	P	S01	
3	U151	100	P	S01	
4	U154	100	P	S01	
5	U159	100	P	S01	
6	U161	100	P	S01	
7	U165	100	P	S01	
8	U166	100	P	S01	
9	U167	100	P	S01	
10	U169	100	P	S01	
11	U170	100	P	S01	
12	U182	100	P	S01	
13	U187	100	P	S01	
14	U188	100	P	S01	
15	U190	100	P	S01	
16	U196	100	P	S01	
17	U197	100	P	S01	
18	U201	100	P	S01	
19	U202	100	P	S01	
20	U208	100	P	S01	
21	U209	100	P	S01	
22	U211	100	P	S01	
23	U213	100	P	S01	
24	U219	100	P	S01	
25	U220	100	P	S01	
26	U221	100	P	S01	
27	U226	100	P	S01	
28	U228	100	P	S01	
29	U238	100	P	S01	
30	U239	100	P	S01	
31	U246	100	P	S01	
32					
33					

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Form Approved. OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

EPA I.D. Number (Enter from page 1)	Secondary ID Number (Enter from page 1)
N D 0 0 5 0 6 8 7 0 5	

XV. Map

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

XVIII. Certification(s)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature: W. Michael Weaber	Date Signed: 7-26-95
Name and Official Title (Type or print): W. Michael Weaber, Vice President & Elkhart General Site Manager	
Owner Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature	Date Signed
Name and Official Title (Type or print)	

XIX. Comments

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)

BAYER CORPORATION
1884 MILES AVENUE
ELKHART, IN 46514-2201
IND005068705

X. OTHER ENVIRONMENTAL PERMITS

A. PERMIT TYPE	B. PERMIT NUMBER	C. DESCRIPTION
E	N.A.	INDUSTRIAL USERS CONTRACT ELKHART WASTEWATER TREATMENT PLANT
E	85-02	SIGNIFICANT INDUSTIRAL USER CITY SEWER SYSTEM
E	91-03	SIGNIFICANT INDUSTIRAL USER CITY SEWER SYSTEM
E	SDA-IN-1291	WATER QUALITY PERMIT FOR ALCOHOL DISCHARGES
E	20-9-85-0599	AIR OPERATING PERMIT
E	20-9-85-0600	AIR OPERATING PERMIT
E	20-9-85-0602	AIR OPERATING PERMIT
E	20-9-85-0603	AIR OPERATING PERMIT
E	CP 039-3778	AIR CONSTRUCTION/ OPERATING PERMIT
E	PC(20)1657	AIR OPERATING PERMIT
N	IN 0056707	NPDES PERMIT
N	INR00M010	STORMWATER PERMIT
R	IND005068705	HAZARDOUS WASTE GENERATOR AND STORAGE PERMIT
E	10584	INDIANA SPECIAL WASTE PERMIT
E	10966	INDIANA SPECIAL WASTE PERMIT
E	30837	INDIANA SPECIAL WASTE PERMIT
E	40920	INDIANA SPECIAL WASTE PERMIT
E	50355	INDIANA SPECIAL WASTE PERMIT